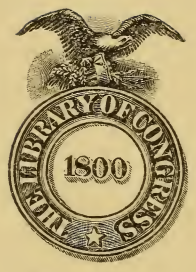
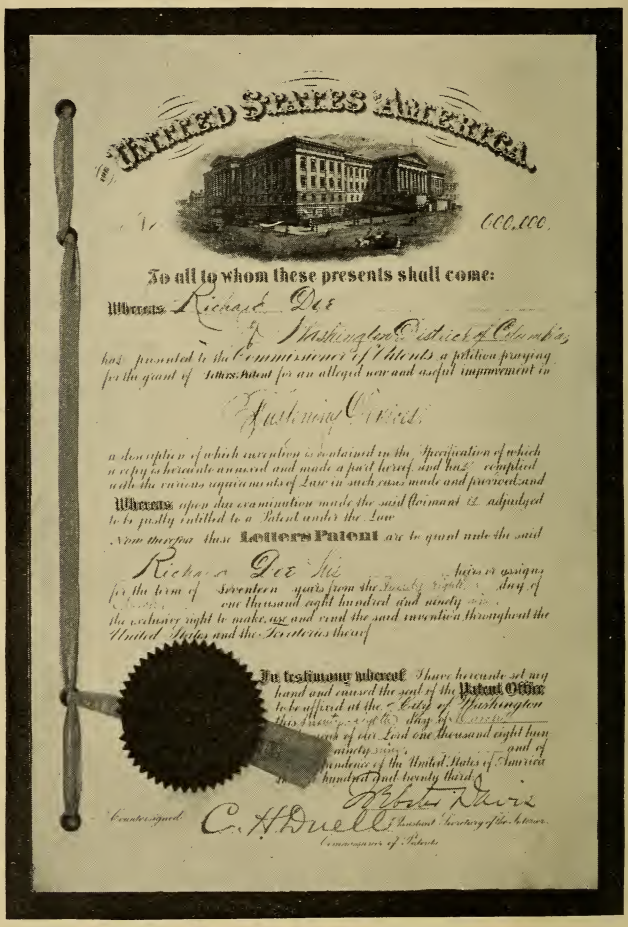
Practical Pointers for Patentees

By

F. A. Cresee, M.E.




UNITED STATES OF AMERICA.

To all to whom these presents shall come:

Whereas Richard Doe

of Washington District of Columbia,

has presented to the Commissioner of Patents a petition praying for the grant of Letters Patent for an alleged new and useful improvement in

Fastening Cords.

a description of which invention is contained in the Specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of Law in such cases made and provided; and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a Patent under the Law:

Now therefore these Letters Patent are to grant unto the said

Richard Doe his heirs or assigns for the term of Seventeen years from the twenty eighth day of January one thousand eight hundred and ninety six the exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this twenty eighth day of January in the year of our Lord one thousand eight hundred and ninety six and of the Independence of the United States of America the one hundred and twenty third.

Countersigned C. H. Duell Assistant Secretary of the Interior. Commissioner of Patents.

A GOOD PATENT, PROPERLY HANDLED,
IS A STEPPING STONE
TO SUCCESS AND FORTUNE

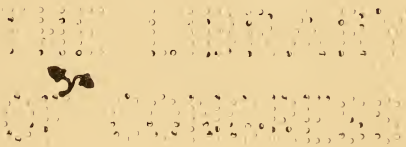
PRACTICAL
POINTERS *for* PATENTEES

CONTAINING VALUABLE INFORMATION AND ADVICE ON THE SALE OF PATENTS

AN ELUCIDATION OF THE BEST METHODS EMPLOYED BY THE MOST SUCCESSFUL INVENTORS IN HANDLING THEIR INVENTIONS

By

F. A. CRESEE, M.E.



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PREFACE

THE original conception and working out of an invention is usually a labor of love on the part of the inventor: having perfected his invention in every detail, he finds able and skilled counsel waiting to prepare and prosecute his application for patent before the Patent Office Examiner. When the patent is allowed or issued, the patentee's real work begins—that of turning the patent into money. This is the business end of the inventor's work, which is generally to his interest financially to undertake himself, or to have under his immediate supervision.

The object of this little work, based upon the experience and observation of the author and other successful inventors, is to give the patentee such information and advice as will enable him to proceed more intelligently, on the most successful and economical basis, to realize from his invention.

The American Government issues annually over twenty-five thousand patents; of these fully nine-tenths are offered for sale by their respective patentees, who in many cases have no definite lines to pursue in negotiating their patents; many

realizing little or nothing from their inventions through careless or bad management, while others, through incompetency, drift into the hands of unscrupulous patent-selling agents only to be swindled.

The numerous inquiries from patentees seeking practical, reliable, and up-to-date information as to the best and most successful methods of realizing from the product of their ingenuity, has led the author, after due deliberation, to prepare and present this work to the American inventor, with a view of supplying a long-felt want, with the hope that it will save them many expensive experiments in handling their patents, and advance them on the road to success.

It has been the endeavor of the writer to cover briefly every subject that is usually encountered by patentees in disposing of their patents, not only in the matter of selling, but also in the equally important and perplexing questions of arriving at the value of patents, legal forms, statistics, etc., etc.

Realizing that the work may be deficient in many respects, the hope that it will prove instructive, and the belief that it contains many practical pointers for patentees is still entertained by

THE AUTHOR.

February, 1901.

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PRACTICAL POINTERS *for* PATENTEES

CHAPTER I

DEMAND FOR INVENTIONS OF MERIT

That there is a demand for inventions of merit which can be readily disposed of at a reasonable profit to the inventor, there can be no doubt. There perhaps never was a time in the history of our country when the demand for meritorious inventions was so great as the present. The conveniences of mankind, in all his varied vocations and callings, require continual changes and improvements in the apparatuses and implements used in order to save time, labor, and expense, and to keep pace with the never-ceasing progress of civilization.

At no time in the past has there been so deep an interest manifested by the public generally in the inventions of our bright-minded men and women, and at no time has capital been more readily interested and ready to invest in any

practical improvement which can offer a fair chance of monopoly under the patent laws.

Business men, capitalists, and manufacturers are ever on the alert for new and desirable inventions, which will supersede in utility those which are already on the market. By purchasing such inventions, they secure novelties which will not only enable them to avoid the keen competition and to a great extent monopolize the trade in their own respective lines of business, but also to make sales more easily, and thus make their business more profitable.

Every well-informed person knows that a monopoly is the desideratum of business men. The monopoly or protection of an industry afforded by the patent laws is, perhaps, the one monopoly that directly benefits the world. Were it not for the protection and monopoly offered inventors by governments, for a certain number of years, to disclose their inventions, inventors would simply keep them secret, or if used at all, would do so only in such a manner as would prevent the world at large from learning of or utilizing it, thus debarring the public as a whole from its benefits. This monopoly in patents has had much to do with the material progress of the world during the century just ended.

Monopoly in Patents.

Anyone having a monopoly of a good trade article is assured of a fortune. If capitalists and

manufacturers can secure the control of any new invention of merit for their sole use and purposes, which can be manufactured and sold more cheaply than those now on the market, and which will perform its work in a quicker and better manner than the devices now in use, they will be only too willing to pay patentees handsomely for patents covering such inventions.

There are numerous staple articles of commerce whose manufacture is open to all, and which every mercantile house in the country is handling at a profit, notwithstanding the great number engaged in its manufacture and sale in every section of the country. Now, if there can be supplied some better or cheaper article in any line of industry, the firm or person who secures the monopoly of its manufacture and sale, simply controls the market, and human endurance and energy are the only limits to the degree of profits such a firm or person can secure from the manufacture and sale of such an article, if adequately protected by a valid patent.

Industrial Progress Based on the Patent System.

In an official report the Commissioner of Patents clearly sets forth that from six to seven eighths of the entire manufacturing capital of the United States is either directly or indirectly based upon patents. This vast amount of money, upward of six thousand millions of dollars, con-

tinually employing great armies of people, in industries based upon patents of every class, supplies the country with improved articles of every description. It has been well said that, "Patents and trade go hand in hand."

The largest and most opulent manufacturers in the country will be found to be the heaviest owners of patents, developers of inventions, and patrons of the Patent Office. While all inventions are not telegraphs, telephones, sewing-machines, or electric lights; nor can all business houses be Westinghouses, Hoes, McCormicks, Bells, or Edisons, yet all over this country, and others as well, there are springing up a great number of moderately large growing firms who, ever on the alert for success, devise or secure control of some valuable patent, by which they can successfully invade and control to a certain extent particular lines of industry.

Nearly every leading factory in the world owes its commencement and success to the prestige and protection afforded by the possession of a good and valid patent.

CHAPTER II

INCOME FROM INVENTIONS

It has been aptly said that the products of all the gold, silver, and diamond mines in the world would not equal in value the annual income of American inventors. It has been carefully estimated that there are at least fifty patents in the United States which yield over $1,000,000 annually, some 300 that yield over one-half million, from 500 to 800 which bring from $250,000 to $500,000, and between 15,000 and 20,000 that bring over $100,000 annuities. Besides these, there are thousands upon thousands of patents which yield yearly more profit to their fortunate possessors than could be accumulated in a lifetime by a wage-earner.

Independence through Successful Invention.

There are thousands of patents sold outright every year by the patentees of the United States for thousands of dollars; and, to the already long list of successful inventors, each year adds many more, who have become independent through the proper handling of the product of their ingenuity. Indeed there can hardly be conceived a quicker way for the average person to attain independence and

wealth than by inventing something of real worth and merit that can be quickly turned into money. The inventive field is large, and each invention opens up a new field for improvements, and it is the "improver," without question, that reaps the greatest benefit from any invention. Owing to the ever forward progress of civilization, there is no limit to the possible improvements in the sciences, arts, and manufactures.

Unprofitable Patents.

It must, however, be borne in mind that all patents are not remunerative, neither are all gold mines productive of fortunes, and one may lose money in patents as well as in any other business. There are thousands of patents, many having merit no doubt, which have never been sufficiently brought before the public to test their merits, effect their sale, or manufacture; this in many instances is owing to incompetency, or bad management on the part of the patentee or his agents. There are thousands of other patents that do not prove remunerative because they do not supply a real want, while still others are such slight improvements upon existing inventions that they necessitate such narrow claims, which render the patent of little or no value. One has only to look over the weekly issue of patents to see many of the last class.

As before stated, while there are many thousands of patents that do not pay—and many no

doubt cause their owners disaster, as is the case in any other business or investment; on the other hand, the far greater proportion of patents granted are productive of handsome profits, if properly managed.

Money in Patents.

That the majority of patents taken out prove lucrative is evident from the fact that upward of fifty thousand applications for patents and designs are filed each year in the United States Patent Office, and upward of five hundred are granted and issued each week. Probably about one-fifth of these patentees obtain their patents with a definite view of manufacturing their inventions, and the remainder obtain theirs with a view of realizing from the sale of the rights to manufacture.

It may be said, as a general thing, there is more money in small inventions than in larger ones, from the fact that they can be easily manufactured anywhere with but little outlay of capital; they usually fill a general need, and the profit derived from their manufacture is large, besides the patent is more readily disposed of; while with larger inventions it requires more money and ability in handling the patent, and the invention must be unusually promising to justify the erection of a plant costing thousands of dollars for its manufacture. However, when large and complicated inventions do pay, they usually pay well.

It must be remembered that the actual cash value of a patent is not in the patent itself, but in the sale or use of the monopoly it affords, and the amount realized from any invention frequently depends upon the business capacity of the inventor or his agents. Owing to his business ability, one person may make a fortune out of an unpromising improvement, while another, through bad or careless management, will realize little or nothing from a brilliant invention.

Business Capacity of the Inventor.

Speaking along this line in an official report the chief examiner of the Patent Office says : " A patent, if it is worth anything, when properly managed, is worth and can easily be sold for from $1,000 to $50,000. These remarks only apply to patents of ordinary or minor value. They do not include such as the telegraph, the planing machine, and the rubber patents, which are worth millions each. A few cases of the first kind will better illustrate my meaning :

" A man obtained a patent for a slight improvement in straw cutters, took a model of his invention through the Western States, and after a tour of eight months returned with $40,000 in cash or its equivalent.

" Another inventor in about fifteen months made sales that brought him $60,000, his invention being a machine to thrash and clean grain.

A third obtained a patent for a printing ink, and refused $50,000, and finally sold it for about $60,000.

"These are ordinary cases of minor inventions embracing no very considerable inventive powers and of which hundreds go out from the Patent Office every year. Experience shows that the most profitable patents are those which contain very little real invention, and are to a superficial observer of little value."

Under the writer's personal observation has come many instances where inventors have secured patents on improvements which to a casual observer would appear insignificant, yet through shrewd management they have been made to yield princely incomes. Among these one case worthy of note is that of a young man in Pennsylvania who secured a patent on a toy game which any person could have thought of, but few would have considered worth protecting by letters patent. He was offered $1,000 for the patent by one manufacturer at the outset which he refused, and afterward he placed it on royalty with quite a number of large manufacturers throughout the country. He receives but one cent on each one manufactured, yet his income averages over $12,000 a year. Another borrowed part of the money with which to obtain a patent on a railway tie plate, which was bought by a

corporation for $25,000, after having manufactured it for two years on royalty. And many others, who have realized from one to five thousand dollars on such slight improvements on which few would have thought worth applying for a patent.

Patentees who would realize any considerable amount from their patents must not sit down and expect the other fellow to make money out of their inventions for them.

Invention is sometimes called the "genius of the poor," and it is a singular fact that there are a greater number of inventions made by men and women of limited means than by those whose wealth, education, and other advantages would seem to have especially fitted them for success in a field dominated so completely by "brains." This may be explained in a measure by the fact that people of moderate means are brought into closer contact with the arts and manufactures, and are thus the first to discover and improve their defects.

Inventions as a Poor Man's Opportunity to Advance.

A self-made millionaire, recently speaking to the writer about patents, said: "I know of no business or vocation requiring so small amount of capital, and yielding such immense profits as that of invention. Certainly no person of inventive genius can employ his time and ingenuity to better

or more profitable advantage than to invent something that is really needed. Many poor men, through the art of invention, have risen from poverty to reputation, fame, and honor, and taken high places among noted men of all times.

Our moneyed kings may have enriched themselves by stock jobbing, but this precarious procedure requires large capital, and the few enormous fortunes accumulated are merely the monuments marking the graves of thousands of foolhardy unfortunates caught in the vortex of speculation."

CHAPTER III

SECURING CAPITAL

It is a curious but well demonstrated fact that people who have inventive genius often lack the means to carry out their ideas. An inventor who has ample means can secure his patent and proceed to turn it into money without the necessity of being compelled to solicit financial aid from anyone. This, unfortunately, is not generally the case with inventors; indeed, many are often barely able to stand the expense incident to taking out the patent. Patentees laboring under this disadvantage are frequently tempted to part with a small interest in their patents for the sake of securing sufficient funds to carry on the promotion of their inventions and sale of the patent; and in doing this the inexperienced patentee is apt to make the fatal mistake of assigning to another an undivided interest in his invention.

Such an assignment may appear well enough on the face of it, and many patentees have been misled, supposing that under the assignment the proceeds from the patent should be divided *pro rata*, according to the several interests. This, however, is not

Danger in an Undivided Interest.

the case in such assignments, and joint-ownership of a patent, or interest therein, does not of itself, without an express agreement to that effect, make the parties partners. They are merely tenants in common, each having the right to separately make, use, or sell the invention so assigned without liability to account to their co-owners for any part of the profits derived from the invention through their own efforts.

In an assignment of an undivided interest, the assignee is afforded an opportunity of manufacturing, using, and selling to others to be used the article covered by the patent; also, to grant territorial grants, such rights being unlimited by the terms of the assignment, and it is actually of little consequence how small an interest is thus conveyed, the assignee can proceed with the patent in much the same way as if he were the sole owner; therefore, whenever it is intended that the relation of co-partnership shall exist between the patentee and the assignee of an undivided interest, and that the profits arising from the invention shall be equitable, for their joint benefit, there must be an express agreement between them to that effect, otherwise the assignee will have a decided advantage over the inventor, if he is inclined to be dishonorable, and there are numerous cases on record where patentees have virtually lost their patents by such assignments. Patentees should

especially guard against strangers who offer to purchase an undivided interest in their patents.

A better procedure to secure means necessary for the development, introduction, and sale of an invention is to borrow the money from a friend contingent on the sale of the patent, sell a State or county right, or enter into a contract with a party willing to furnish the means for a certain proportion of the proceeds derived from the invention. Generally speaking, it will not be hard to find a party willing to advance sufficient means to promote an invention which is protected by a patent for a certain percentage of the net receipts arising from its manufacture, sale, or territorial grants, and the patentee will probably find a person among his own acquaintances who will not only be glad to furnish the means necessary, but also be of value to the patentee in realizing from his invention. In any case, whatever is agreed upon should be put in the form of a contract, or an agreement, couched in such terms as will leave no doubt as to the understanding between the parties. The following form secures both parties, and will be suggestive of others :

A Better Plan.

Whereas I, Richard Doe, of Philadelphia, County of Philadelphia, and State of Pennsylvania, have invented certain new and useful improvements in

Telegraph Keys, for which I have obtained Letters Patent of the United States, bearing date January 1, 1901, and number 000,000, and whereas John Roe, of Camden, County of Camden, and State of New Jersey, is desirous of obtaining an interest in the net profits arising from the sale or working of the said invention covered by the said Letters Patent.

Form of Agreement.

Now, therefore, this indenture witnesseth, that for and in consideration of one dollar by each of the parties hereto paid to the other, the receipt of which is hereby acknowledged, it is stipulated and agreed as follows :

First, That the said John Roe shall pay all moneys necessary to the construction of a suitable model to represent the said invention ; that he shall pay all necessary expense in advertising and bringing said invention before interested parties (and such other clauses as may be deemed necessary and agreed upon, such as the expense of constructing a working model, or carrying out a process, etc.) ; that he shall make diligent effort to promote the said invention, its manufacture, and sale.

Second, That the said Richard Doe, sole owner of said invention and Letters Patent, in consideration of the payment of the moneys above mentioned, agrees to pay the said John Roe twenty-five per cent. (or other amount agreed upon) of

all the net receipts in any manner arising from the sale or working of the said Letters Patent, during the term for which said patent is granted.

Witness our hands and seals this tenth day of January, A.D. 1901.

RICHARD DOE,
JOHN ROE.

In the presence of:
JOHN SMITH,
THOS. JONES.

Perfecting Inventions.

Before filing an application for a patent, the inventor should see that his invention is fully developed and perfect in every detail. Many inventors are in such haste to get their inventions in some kind of presentable shape that they do not give these minor, but equally important, details due consideration, and consequently often get patents for inventions which are so crude and primitive as to be almost worthless. However, if the patentee has been so hasty in making his application for a patent, he should not think of exhibiting it, or presenting it to manufacturers or capitalists until he has perfected every detail, as it must be remembered those furnishing capital to promote inventions, and those who assist inventors in placing their inventions on a business basis, are, as a rule, neither mechanical nor scientific, and can therefore make no allowances for imperfections or mistakes.

Exhibit of the Invention.

When an inventor first exhibits his invention, it should be so perfected and put into such practical shape that it will need no explanation of mistakes or excuses that certain portions of the device have not been quite perfected, or this or that needs to be done in order to accomplish the desired result. Such a procedure would be sure to be fatal to the success of the invention. There must be no mistake about the working of a machine, apparatus, or process. It would be far better to spend a year or even longer in perfecting the invention than to exhibit something that is so imperfect as to require a multitude of excuses and promises as to future improvements. The first impressions of an invention are all-important, and the inventor should not fail to make every effort to exhibit his invention in the best possible shape.

To Avoid being "Squeezed."

The patentee who proposes to realize from his invention should never let it be known that he is in want; of course, in some cases he cannot help himself, but he should endeavor to obtain the necessary assistance from his acquaintances, and under no circumstances let those with whom he is trying to deal get an insight into his financial condition, as capitalists and others will very often take the advantage of an inventor when known to be in straitened circumstances, and the patentee probably would

not realize as much from his patent as he otherwise could. Therefore, it is advisable in all cases for the patentee to manifest no impatience, remain silent as to his financial condition, and strive to impress those with whom he is dealing that he is in no condition to be "squeezed."

Value of Record of Invention.

Inventors, while working on a complicated machine, should not overlook the value and importance of keeping a record of the progress of the development, illustrating it with sketches, signing and dating them with each new addition, and, when practical, having it witnessed by one or more persons. This plan is preferred by many inventors to filing a caveat. Such a record will be found very valuable in case of an infringement, as it enables the inventor to ascertain the various steps of his invention, and is a sort of evidence that cannot be impeached. Such a record of a complicated invention, when the inventor has put much time and study upon the subject in perfecting it, will also be found valuable in effecting sales, and in fixing the price of the patent.

Prejudice against Patents.

It cannot be denied that at the present time there seems to be in many sections of the country a strong prejudice against patents, which sometimes makes it difficult to get people sufficiently interested to take hold of any patent; especially is this true

when the patentee endeavors to sell his patent piecemeal; that is, by county, township, shop, or farm rights. No matter how important or valuable the invention may be, there seems to be a disposition on the part of the public to look upon such rights as a fraud, and to be very cautious how they invest in them.

The public is not wholly to blame for this, as in recent years there has been a class of men who have canvassed the country with patent rights, not caring what representations they made so long as they were able to effect a sale; consequently, many people have been lured into purchasing patent rights for a small territory which in many instances were worthless or not as represented, causing them to be more or less skeptical of all patents, as well as to bring this manner of selling patents generally into ill repute. With manufacturers and capitalists, this prejudice does not exist to any great extent, as with them the patent rests solely upon its own merits.

Many inventors overlook the importance of interesting newspaper men in their inventions. This is a matter of great consequence to the inventor in exploiting his invention, and should be given some attention. Newspapers desire items of interest of every description, and readers are usually interested in brief accounts of any new invention possessing

Newspaper Notoriety.

novelty or merit; so that when the inventor once gets his invention into the newspapers it is generally copied by other papers, with the result that the invention gets a large amount of free advertising and publicity. These items frequently attract the attention of capitalists, manufacturers, and others, and at once put the invention in a favorable position before the public as could be done possibly in no other way—certainly in no cheaper way.

Many of the trade journals and other periodicals are also open to receive technical descriptions of inventions of merit concerning industrial improvements. Such articles should be written in good form, containing not over five hundred or a thousand words, and if admitted to this class of publications will be of the utmost value and importance in creating favorable public opinion, and in advancing the inventor's interests.

With hardly an exception, if an invention strikes editors favorably and is adjudged to be of sufficient interest to form an article of news in newspapers, or of sufficient merit to warrant a description in the trade papers, it is pretty certain to prove a success and bring the inventor large returns.

If the invention is of such a character as to strike newspaper men unfavorably, the inventor can resort to the advertisement columns: using

the large daily papers, or such publications which in some way relate to the industry to which the patent appertains, and such as have the largest circulation among the class of people it is desired to reach. See about advertising on page 46.

CHAPTER IV

HOW TO ARRIVE AT THE VALUE OF A PATENT

Most inventors are not concerned so much about the fame or honor their inventions will bring them, or how much their inventions will advance civilization, or build up a nation, or administer to the conveniences and pleasures of mankind generally, as they are about how much it will net them in dollars and cents; but the patentee should not lose sight of the fact that the profits are in the exact proportion to the actual usefulness of the invention, and its general adaptability. It is immaterial whether the inventor himself intends to deal with the public, or to deal with a man or set of men who are afterward to deal with the public, the conditions are the same, and the profits must ultimately come from the sale of the manufactured article.

It may seem superfluous to say that mere Letters Patent aside from an invention is of no value, though many inventors are under the erroneous impression that if an invention possesses patentability, it must also necessarily have pecuniary value. To be of any pecuniary

Pecuniary Value.

value whatever, the invention must cover something for which there is a demand, or for which there can be a demand created, for it cannot be disputed, that if an invention will not bring in money by manufacturing it, it is, in a financial sense, worthless; and the patent thereon is therefore worth some sixty or seventy dollars less than nothing.

Commercial Value.

An invention, to have commercial value, as previously stated, must cover something for which there is a demand, or for which there can be a demand created. It may be an entirely new device, or it may be an improvement upon an existing invention, but in any event it must contain a certain degree of utility. In rare cases inventors are able to hit upon an invention in an entirely new field; for these a demand has to be created. For improvements, however, as a general thing, the demand already exists; then the important question arises in determining the commercial value of the patent. "Does the invention in question possess sufficient merit to successfully compete with existing devices of the same class?" In order to do this, it must be of a simpler or cheaper construction, so that it can be manufactured and put on the market at a lower figure; or, it must yield better results, work quicker and at less expense, or economize power, labor, or time. A patented improve-

ment upon an article that can be sold more cheaply, or one which will yield better results than those now selling well on the market, has a decided commercial value and can easily be disposed of at a good price. If the inventor be fortunate enough to combine both of these features in his invention, the value is doubled and success certain.

Basis for Estimation.

Perhaps one of the hardest questions that confronts the patentee is how to arrive at a just valuation of his patent, and to know just exactly what he should receive for it. This is a very important question, and one which should be looked into before undertaking negotiations. Patentees should not, of course, undervalue their patents, or accept the first small offer made for fear of not receiving another; at the same time, they should not fall into the common error of asking a price that cannot be obtained, which too frequently precludes all chances of a sale. Many business men would rather lose the patent than waste their time constantly dickering about an unreasonable price.

Inventors should be reasonable in their demands, and consider that the purchaser must have a fair share of the profits. He cannot expect to realize all there is in the patent himself. Indeed, patentees usually find that men willing to establish a business on the basis of their untried patents will

require the greater bulk of the profits to be derived from it.

General Rules for Valuation.

It is evident that only the most general rules for valuation can be given, as each invention must be studied and valued strictly upon its own merits. Undoubtedly, the best and most practical method of ascertaining the value of any invention which is susceptible of being manufactured on a small scale is to have a limited quantity of the articles manufactured—say five hundred or a thousand—and try the experiment of introducing them in a small territory; that is, in a certain county, city, or town, taking great precaution in selecting a person who is capable of carrying forward the business in a business-like manner. This method demonstrates conclusively whether or not the invention will meet with success, and with these figures at hand the patentee will be prepared to prove, to the satisfaction of interested parties, just what the patent is really worth.

This method of procedure not only enables the patentee to get a just valuation of his patent, but also puts it in a more favorable position to be sold; since the commercial value is known and established, it no longer remains an experiment. Interested parties can take their calculations from these figures, and the patentee can exact a price in proportion to the success of the trial experiment.

In order to thus demonstrate the value of a patent, the patentee must possess and advance the necessary means to carry it forward, though, if the experiment prove at all successful, the profits derived from the articles sold will in nearly all cases more than offset the expense incurred. This is a very popular course with inventors, especially in handling small inventions, known as novelty or specialty patents.

If the patentee have not the means to successfully demonstrate the value of his patent by actual trial, as above outlined, then the next best course would be to inquire among reliable manufacturers and ascertain the lowest price for which the invention can be manufactured in large quantities, and the highest price at which it will retail; and then, by carefully studying the market, the patentee should be able to estimate the amount of competition, cost of selling, probable number of sales, interest on the investment, etc., and on these figures base the price he should receive for the patent, being careful to allow the purchaser a liberally fair profit.

While there are at present over seventy-seven million inhabitants in the United States, it is scarcely probable that any invention has yet or ever will be made that will reach half this number of people. With an article of the most general adaptability, including both sexes, the inventor

can hardly hope to reach more than a fourth of the entire population, though, of course, the invention may be subject to regular consumption, so that the people reached would naturally purchase the article again a number of times during the course of a year.

The statistics in the last chapter are given with the view of assisting patentees in determining what proportion of the population will likely want their inventions, and to enable them to estimate prices. In estimating the price to ask for a patent, patentees should not conceive and hang their hopes upon fabulous prices and immediate wealth, which too often dooms ambitious inventors to bitter disappointment; they should rather endeavor to look at their inventions from the purchaser's stand-point, and try to see it in the light in which others view it. It may be well to remember, too, that up to January 1, 1901, 790,623 patents, including re-issues and designs, had been granted by the United States, and it is quite probable that any one inventor may not have the only good thing in the line of patents.

How Rating for Royalty Is Figured.

Many patents are more profitable by being placed upon royalty than by any other means, and quite often the patent can be placed this way when it is not possible to sell outright at a satisfactory price. In determining what royalty the patentee should receive,

he should carefully estimate, in connection with the probable number of sales, what profit the manufacturer can probably make on each, or a number of the articles containing the patented improvements, and should require about twenty-five per cent. of the profits as royalty. Another method used by some inventors is to ascertain the price at which the article can be retailed, and figure the royalty at between one-twentieth and one-tenth of the retail price. Either of the above should give the approximate figure to ask for exclusive royalty contracts. For non-exclusive rights the patentee should ask about one-half of that for exclusive rights.

Stock in Stock Companies.

There is another class of patents that can be best realized from by organizing the proper kind of joint stock companies, and manufacturing the invention, the inventor taking a certain amount of the stock and assigning the patent to the company. The patentee should receive between one-fourth and one-half of the capital stock in consideration of his assigning his patent and rights to the company.

The inventor should see that a good portion of the stock is subscribed for and the amount actually paid into the treasury of the company before making the assignment. As a rule, inventors' stock is full paid and non-assessable.

Prices for Territorial Rights.

In calculating the prices for territorial rights, the application of the invention to that section must be taken into consideration, as well as the advancement in manufacturing, etc. If the invention belongs to that class of inventions which may be generally adapted in all States alike, such as domestic articles and articles of wearing apparel, then the population will form a very satisfactory basis for valuation.

There are other inventions, however, that apply almost wholly to a certain section of the country, while still others apply more to one section than to another; thus, for instance, mechanical contrivances of the higher order, such as writing machines, mathematical instruments, etc., the North and East are the most valuable; for mining and agricultural implements, etc., the West; while such as the cotton-gin, seeders, and presses apply almost wholly to the South. States and counties having large cities and large towns are also usually more valuable than other States and counties of same population.

Valuation Tables.

The following tables are given as a general estimate of the relative value of the different States and divisions in the majority of cases; however, these tables are only arbitrary at best, and cannot be applied to all classes of inventions satisfactorily, though they

may serve to materially aid the patentee in determining what price to put upon each State in his own case. Having determined the value of the patent as a whole, the aggregate of the State prices should be about two-thirds more, as there are always some States that cannot be sold separately, while others may have to be sold at a discount.

TABLES FOR ESTIMATING PRICES OF STATE RIGHTS

States and Territories.	Price as a Whole.				
	$1,000	$5,000	$10,000	$15,000	$20,000
Maine	35	175	350	500	700
New Hampshire	30	150	300	450	600
Vermont	30	150	300	450	600
Massachusetts	50	225	500	750	1,000
Rhode Island	20	100	200	300	400
Connecticut	35	175	350	500	700
New York	65	300	650	950	1,200
Pennsylvania	65	300	650	950	1,200
New Jersey	40	200	400	600	800
N. Atlantic Division	$370	$1,775	$3,700	$5,450	$7,200

TABLES FOR ESTIMATING PRICES OF STATE RIGHTS—*Continued*

States and Territories.	Price as a Whole.				
	$1,000	$5,000	$10,000	$15,000	$20,000
Delaware	20	100	200	300	400
Maryland	40	200	400	600	800
District of Columbia	15	75	150	200	300
Virginia	35	200	400	600	800
West Virginia	35	175	300	500	700
North Carolina	35	150	300	450	600
South Carolina	35	150	350	500	700
Georgia	40	200	400	600	800
Florida	15	75	150	200	300
S. Atlantic Division	$270	$1,325	$2,700	$3,950	$5,400
Ohio	60	300	600	900	1,100
Indiana	55	275	550	800	1,000
Illinois	65	300	650	950	1,200
Michigan	45	200	350	600	800
Wisconsin	40	150	275	400	500
Minnesota	45	200	350	600	800
Iowa	40	175	350	500	700
Missouri	45	225	450	650	900
North Dakota	25	75	150	200	300
South Dakota	30	100	200	300	400
Nebraska	30	150	300	450	600
Kansas	40	175	300	500	700
N. Central Division	$485	$2,325	$4,525	$6,850	$9,000

TABLES FOR ESTIMATING PRICES OF STATE RIGHTS—*Continued*

States and Territories.	Price as a Whole.				
	$1,000	$5,000	$10,000	$15,000	$20,000
Kentucky.	40	200	375	600	700
Tennessee	30	175	350	500	700
Alabama	30	150	300	450	600
Mississippi	30	150	300	450	600
Louisiana	35	175	300	500	700
Texas	35	175	300	500	700
Oklahoma	20	100	200	300	400
Arkansas.	20	75	150	200	300
S. Central Division.	$230	$1,200	$2,275	$3,500	$4,700
Montana	15	50	100	150	200
Wyoming.	20	100	175	250	300
Colorado	40	175	350	550	700
New Mexico	15	50	100	150	200
Arizona	15	50	100	150	200
Utah	15	50	100	150	200
Idaho	10	50	75	100	200
Washington	15	50	100	150	200
Oregon	20	75	125	200	300
California.	50	250	450	700	900
Western Division	$235	$975	$1,800	$2,750	$3,700
Grand Total	$1,600	$7,600	$15,000	$22,500	$30,000

CHAPTER V

HOW TO CONDUCT THE SALE OF PATENTS

WHILE the inventor may put much hard study upon his invention and make many costly experiments, this part of his work is usually a pleasure ; and in securing the patent he invariably has able counsel in his attorney with no anxiety on his part ; but with the commercial proceeding of selling his patent, which involves the greatest prudence and care in managing, it is different, and here is where the inventor's real work begins if he expects to reap the benefit of his invention.

For the benefit of unexperienced patentees it is deemed expedient to give a word of warning here regarding the host of so-called patent-selling agencies, which under various imposing titles, coupled with an apparently honest and straightforward method of business, tempt each patentee, upon the issue of his patent, to place the same in their hands and authorize them to negotiate the sale thereof. Their propositions are very attractive and temptingly prepared ; their offers appear to be "gilt edge" ; their circulars are high-sounding and

Patent-selling Agencies.

rose-colored; their contracts are formal looking, and drawn up in an impressive way, highly advantageous to the patentee; but it will be noted in all cases that they will require the patentee to pay down a certain sum under some pretence,—such as to cover the cost of advertising the patent, to have circulars printed, to secure copies of the patent for distribution, to have a cut made illustrating the invention, or for membership fee, and so on, it matters not what, so long as it is an advance fee. Many will also agree to sell both the United States and Canadian patents, if the patentee will file the Canadian application through them; it is evident, however, that this is only a scheme to get the patentee to take out the Canadian patent through them—they having no facilities for disposing of either of the patents.

The writer is not prepared to say that there are no honestly conducted patent-selling agencies, but from long experience and observation, has never known where a patentee was ever materially benefited by placing his interests in the hands of these concerns, and has yet to learn of them ever making a sale solely through their own efforts. Very few of these concerns have any facilities whatever for selling patents; all of their time being taken up in mailing their weekly circulars to inventors immediately upon the publication of the *Official Gazette*, and working inventors up to the

remitting point which usually ends the matter so far as they are concerned, unless they believe they can get another fee out of the patentee.

There may be exceptions, but patentees should fully satisfy themselves as to the integrity of these firms before placing business in their hands, as the Assistant Commissioner of Patents in his report in the Webberburn case, 81 O. G., 19 K, clearly pointed out that the methods of these concerns were such as to sell the patentees rather than their patents.

The Patentee the Best Selling Agent.

That the patentee himself is the best selling agent there can be no doubt, for he is familiar with the construction and operation of his invention in every detail, and knows its merits and superior points far better than anyone else, besides manufacturers and others wishing to purchase patents invariably desire to deal with the patentee himself. Business men, it may be said as a rule, do not think very much of an invention which the inventor has abandoned to others to negotiate, moreover the personal push of the inventor is, in nearly all cases, essential to the successful termination of a sale.

Subtract the personal energy and presence of the inventor from the successful inventions of the past and of to-day, and the chances are that they would not have succeeded as they did. It is not

only a question of material interest, but also of enthusiasm and confidence, and each patentee, having but one patent or a set of patents to push, can lend thereto that individual attention which insures good work and success.

In Case the Patentee Cannot Undertake the Selling.

However, if from any reason the patentee is unable to handle his own invention and must engage the services of an agent or salesman, he should select one from among his own acquaintances, in whom he has confidence. He should if possible get a person who has had experience in the line of the invention, as such a person would likely understand it and the trade better than others. It is not really necessary that he should have had experience in selling patents; if he is a good talker, knows how to approach business men, and thoroughly understands the invention, he will probably make money for the inventor and himself. The patentee should have him submit all offers of value for his consideration, and should not give the agent power to sign or collect. The patentee should name a reasonable price for the patent, allowing the agent a liberal commission upon the price, and encouraging the agent by allowing him a certain percentage of all he may be able to get over and above the price named. This will encourage the agent to work for the highest price obtainable. The inventor should make every effort

to be able to personally attend to the details of selling, and keep the business under his personal supervision.

Methods of Selling Patents.

There are a number of plausible methods to which the patentee may resort in disposing of his patent without the aid of questionable selling agents, and it is the purpose of the following pages and succeeding chapter to set forth such methods as have in the past proved beneficial to patentees; those along which success have been achieved, and such as are employed by the most successful inventors of the present time in handling their patents.

It is true that no definite method or system can be given that will apply to all patents alike, as the method in each case will depend more or less upon the character of the invention, and to the particular art to which it belongs; however, from the following pages the patentee should be able to judge what particular methods will best apply to his individual case, and proceed along these lines.

There are many patents issued which the patentees thereof can as successfully dispose of from the smallest hamlet in the United States as from New York, Chicago, or any of our larger cities, while, of course, there are others which only those directly connected with the largest and wealthiest corporations can hope to dispose of successfully. The main thing is not to become discour-

aged or give up until one succeeds in making a sale.

About Advertising.

To make the merits and importance of an invention publicly known is, in many cases, one of the best ways of bringing about the introduction and sale of a patent. If the inventor has a patent on an invention that manufacturers or others want, and can make its merits and superior qualities known to them, negotiations will soon follow. There is no way for patentees to place themselves in communication with prospective investors quite equal to an advertisement in the proper medium. Here it may be well to state that patentees who decide to advertise their patents for sale or otherwise should place their advertisements in publications of known standing, such as the leading daily newspapers. A brief, well-worded advertisement in the "Business Opportunities" column of these papers bring quick and good results, though, perhaps a better class of inquiries may be obtained by advertising in the trade journals of the class to which the invention relates, and while the trade journals may not bring about as many inquiries as the dailies, those that answer will be more apt to be interested and talk business. Either of the above are good mediums, but in advertising patents for sale patentees should carefully avoid those publications that are published at uncertain

intervals, and usually for the express purpose of circulating among inventors for various purposes. They do not reach the class of people that invest in patents. Inventors should know the class of people that would be likely to become interested in their inventions, and advertise in such mediums as have the largest circulation among that class.

How to Write an Advertisement.

In the construction of an advertisement there is often too much waste by using too much verbiage, too many unnecessary words or sentences, and sometimes too much display. Prudence in the arrangement, and care in editing an advertisement, will save much expense. The size of an advertisement of this class has really little to do with its pulling qualities.

The statements should be assuming, and at the same time truthful, as any deception in an advertisement is sure to work an injury. There should not be more claimed in the advertisement than sounds reasonable, even though it be stating facts; if an advertisement sounds unreasonable it will not have the desired result. Inventors sometimes become so enthusiastic over their inventions that they exaggerate unintentionally. A good rule is for the inventor to read over the advertisement, and ask himself, "If this statement was read by me, would I believe it; would it convince me?" etc.

Putting one's self in the purchaser's place is always one of the best factors in writing good advertisements. The inventor should put himself in the place of the purchaser of the patent, and reason what would induce him to investigate its merits; what would likely cause him to take it up, and so on; he should think and write fully along these general lines, incorporate these reasons into an advertisement; then boil it down by cutting out the unnecessary words and sentences; prune, remodel, and rewrite until he has a brief advertisement, clear, concise, and to the point.

Correspondence as a Means of Bringing Patents before Interested Parties.

While to advertise, as suggested in the foregoing pages, would require a very moderate outlay, and be, perhaps, the better course to pursue: however, in connection with it, or if the patentee does not feel that he can afford the expense of advertising, a very good plan is for him to secure copies of a number of the trade journals of the class to which his invention relates, and carefully look over the advertisements therein, and select a list of such manufacturers as would seem likely to be induced to purchase the patent in question, or manufacture the article on royalty. In this manner the patentee will probably get the best up-to-date list obtainable, and it may be set down as a fact, with very few exceptions, that if manufacturers

and dealers who make and handle just such articles as the patent calls for cannot be interested, it is very hard to interest others not engaged in such line, except when the invention is large, and requires a great deal of capital to work the same.

To each of the parties of the list thus selected, or to a number of them, the inventor should write a well-composed and convincing letter setting forth the invention in its best light, and stating just why it would be to the interest of the parties solicited to investigate the same. Some time should be spent on this letter before attempting to write it, and the writer should weigh well in his own mind what would be best to say, and the proper way of expressing it. He should be as brief as possible, consistent with legibility. The statements should be assuming, yet in every respect true. He should state in brief terms just what the invention is, what it will do, the points and advantages it has, and at the same time endeavoring to get the parties interested so that they will inquire into the invention, rather than attempt to come to terms in the first letter.

How to Correspond with Manufacturers.

The letter should be brief and pointed, and plainly written upon business-size paper ; and if the inventor has a typewriter, or access to one, he should use it. If he has printed circulars he should send one with his first letter, which will

enable him to make the letter briefer and more business-like.

In correspondence it is well not to name a price until the parties are interested, and first endeavor to get them to make an offer. The patentee should be patient and should not expect to jump right into a bargain at once. If the invention is a meritorious one there will be more than one of the manufacturers to whom the patentee may write, who will become interested, and when such a state exists, the patentee can begin to be more exacting as to his demands since competition has been created between the manufacturers.

Circulars.

A few dollars invested in circulars will frequently be found of great value to the patentee if he intends to negotiate the sale of his patent mainly by advertising and correspondence, as they will save a great deal of writing and explaining as well as appear more business-like and attractive, and may be the means of more readily effecting a sale.

Illustrations.

If the patentee can afford the additional expense of an illustration, it will greatly increase the appearance of the circular, and make it more readily understood and interesting. The cut should be neat and set forth the invention in its best light. It would be better to entrust the procuring of the cut to the printer, for he will know just what is wanted and can se-

cure the same at a better price. A sufficient number of well printed circulars, with illustration, can be obtained of any printer for about $3.

About Getting up Circulars.

The circulars should be attractive, convincing, and logical; nicely arranged, and neatly printed upon good paper. A mistake is often made in sending out trashy-looking circulars, poorly printed upon cheap paper; they repel rather than attract, and do not have the desired effect.

The circular should have good head-lines so as to attract the attention of its recipient at a glance, and his interest should be held by having the uses and advantages of the invention well written.

Many of the pointers suggested in advertising and letter-writing will equally apply to the writing and getting up of the circulars, and need not be treated further here, except that the patentee should dwell especially upon the merits of the invention, its uses, and advantages over like articles. This should be done in the most interesting manner possible, describing it so that its value will be fully understood.

Copies of Patents, How to Secure.

By addressing the Hon. Commissioner of Patents, Washington, D. C., patentees may obtain any desired number of copies of their patents by giving the patent number, date of issue, patentee's name, and the title of the invention, and remitting at the rate of

five cents per copy. The Patent Office does not accept postage stamps: money orders, postal orders, and checks should be made payable to the Commissioner of Patents.

The office also issues five-cent coupon orders in packages of twenty at $1 per package, or in books containing one hundred coupons with stubs, bound, at $5 per book. One coupon will procure a printed copy of any patent, two coupons a copy of the *Official Gazette*—a weekly publication containing the claims and one figure of the drawings of all patents of that week's issue.

It will be well for the patentee to order some printed copies of his patent, as manufacturers and others usually ask for them if interested, in order that they may examine the patent, or have an expert to examine it, to ascertain its validity, novelty, and what protection is really afforded by the patent. It cannot be denied that in either case the invention will suffer a cold-blooded rigid examination, and must stand or fall solely upon its merits. If, however, the invention is adjudged to have real merit and properly protected by the Letters Patent, business negotiations will likely begin, and the patentee will perhaps speedily make a satisfactory deal.

Uses of Printed Copies.

Some inventors use printed copies of their patents instead of circulars, but, while they fully set

forth the invention in a technical way, it cannot be said that in all cases it is advisable to send copies of the patent until called for. Many parties who become interested in patents are not familiar with mechanical drawings and technical specifications, and very often do not get a very favorable impression from a copy of the patent; and it is very important that the first impressions should be favorably created, for upon this much will depend. If a party becomes sufficiently interested to fully investigate an invention, they are very apt to form a favorable opinion of it.

First Impressions All-Important.

There is no way of so easily creating a favorable impression and gaining the interest in an invention as by a neat and perfect working model of the invention. Man never loses the child-love for toys, and a perfect miniature machine of any description will attract more attention than one of full size. With a model the inventor has the full and immediate attention of his prospective purchasers at once. If the patentee, or his agents, intends visiting manufacturers, or to sell the patent by territorial rights, he will find a model of his invention almost indispensable.

Value of Models.

Inventors should be very careful about sending models to unknown parties, and should mark the number of the patent and their name and address

upon the model. It should invariably be understood in advance who is to pay the transportation charges, before sending a model with any charges to collect.

While models are very helpful in setting forth an invention and making sales, high prices exclude many inventors from their use. Model-makers usually charge fifty cents per hour for each man working upon the model, and market price for the material used; from these figures the inventor may make a rough estimate of what a model of his invention will cost.

Working Drawings.

Working drawings are different from those forming a part of the patent in that they are more detailed, giving the size of each piece and the material of which it is constructed. While working drawings are not quite as expensive as models, they do not show the invention to the advantage that models do, and are of little value to those who do not understand them. On the other hand, working drawings have the advantage of being easily sent through the mails, and can be duplicated at small cost. Manufacturers prefer working drawings to models in quoting prices on manufacturing the invention in quantities.

CHAPTER VI

HOW TO CONDUCT THE SALE OF PATENTS— *Continued*

In conducting the sale of patents, the greatest difficulty is most frequently experienced in getting manufacturers or others sufficiently interested to look into the merits and possibilities of the invention. If the inventor can get the parties to actually consent in their own minds to the proposition of taking up the invention, the question of terms and conditions can soon be arranged. Until the parties solicited can see beyond a doubt that there is large profits in it for them, the price of the patent is out of the question ; therefore, the first step is to demonstrate its merits and commercial value, and get the parties thoroughly interested.

Patentees should not labor under the impression that because a patent is offered at a very low price that it will be quickly snapped up as a bargain ; as before stated, if a patent will not bring in money by manufacturing and selling the article, it is worthless ; and its real value is in exact proportion to the amount of profits that can be made from its manufacture.

Should the patentee find that his patent has no commercial value, it is almost useless to spend more time and money in trying to realize anything from it; he had better start again, and endeavor to invent something that has value and can be sold.

Value of Personal Influence.

Inventors should use the full extent of their personal influence to spread particulars of their inventions as far as possible, for this indirect work is often a leading factor in creating a favorable impression that frequently results in the adaption of an invention.

However unacquainted he may be in a business way, every patentee can, more or less, in his immediate neighborhood, consult with merchants, friends, and others in the line of his invention, who can post him upon the right parties to submit the patent to, and the best way to see them about it, and perhaps go with him to visit such as might be interested in the invention.

Personal Solicitation Advisable.

In nearly every case it is more satisfactory for the patentee to call on the manufacturers or interested parties personally whenever it is possible for him to do so. This brings about a more satisfactory understanding between them. Many inventors, however, prefer opening up communication by correspondence, and after the parties manifest a willingness or desire to look into the invention

more closely, then arrange to visit them personally.

Having determined upon a visit, the patentee should endeavor to get a friend known by the parties to go with him to make their acquaintance. If the friend cannot go with the patentee, he will probably give him a note of introduction. It may happen that his friend does not know the parties whom the patentee wishes to see, in that event he may know of someone who does, to whom he can introduce the patentee and who in turn may either go with him or arrange to make him known to the parties solicited. An introduction, of course, is not absolutely necessary, but it invariably has a good effect and is generally worth the effort.

The patentee should be prepared to make a straightforward, business-like presentation of his invention by means of a suitable model or drawings; carefully explaining its merits and advantages, showing as clearly as possible just what the value of the invention is and what can be made out of it, and giving tangible reasons why it would be to the interest of the parties solicited to invest in the patent. If the patentee is dealing with a manufacturer it is well to point out not only the possible advantage he may have by securing the control of the patent, but also the possible loss that his business may suffer by allowing one of his competitors to obtain its control. Many busi-

nesses have been hopelessly crippled by an enterprising firm securing control of a good patent and introducing a like article that can be sold cheaper, or one that will do its work in a better and more satisfactory manner.

Many inventors prefer to sell their patents outright; that is, in consideration of a specified sum of money the patentee assigns his entire interest in the patent, in the same manner that a person would sell a piece of real estate. This is a very good method and one of the quickest ways for the patentee to turn his invention into money, though it must be remembered that to sell a patent outright is usually for a very much smaller sum than could be realized if handled by other methods.

Selling Outright.

The day for obtaining enormous sums or fortunes from the sale of a patent outright is past; at present to realize any considerable amount, the patentee generally has to share in the risks as well as the profits, unless the invention is very highly developed, and even then he cannot expect to get as much out of an outright assignment as he could by sharing in the success of the invention commercially. If, however, the patentee is content to take the utmost cash his patent will bring him outright, he is assured of a principal or lump sum, free from any chances of the article not selling well when placed upon the market.

Before signing and delivering the assignment, the patentee will, of course, see that he has the consideration, or its equivalent, for which the assignment is made. If the transaction is made through correspondence he should send the assignment duly executed to the purchaser through the bank or express C. O. D. for the amount.

Assigning an Undivided Interest.

In a preceding chapter, the dangers and disadvantages of an undivided interest are set forth, and it cannot be considered a wise course under any consideration to part with any undivided interest in the proprietorship of the patent, unless unusually well paid, or there exists an agreement of copartnership between the patentee and the assignee. By such an assignment, no matter how small, the patentee loses control of his patent.

Dividing a Patent into Different Classes of Rights.

Many patents, from the nature of the invention, can be subdivided into different classes of rights, and each class sold or granted separately as the patentee may choose. Thus, the patentee of a tire, or other appliances for a bicycle, could license one party to make the same for bicycles and another for automobiles. In like manner a car-coupler could be divided between those who build railway equipments and those who build street-cars, and so on.

Goodyear, the inventor of the process of vul-

canizing rubber, divided his patent up into many different rights, licensing one company for manufacturing rubber combs, licensing another for hose pipes, another for shoes, another for clothing, and a number of other different rights, for which each company or partner paid a tariff. Lyall, inventor of the continuous loom, also divided his patent into many different rights ; one company weaving carpets, another corsets, another bags, another sheeting, etc.

In every case where the invention covers articles not in the same line of manufacture, the patentee should not fail to divide the rights into different classes, granting each party only such rights as they may be interested in. In this way the patentee can quite often double or treble the receipts from his invention.

The patentee may, if he desires, have his machines built and require the purchasers to pay him a regular annual rental on each machine, or a tariff upon the goods produced, in addition to the price of the machine. Companies are sometimes organized to manufacture an invention, and employ travelling men to place the article on annual rental instead of selling.

Another method is to sell State and county rights. This consists of a license whereby the patentee, in consideration of a certain sum of money paid him, grants unto another person or

persons the exclusive right to make and sell the invention, and to authorize others to make and sell the same, within a specified territory, during the life of the patent. This plan of disposing of a patent has often been highly profitable, but it must be said that these territorial sales have been conducted in such a manner in the past, as to bring the whole system of selling patent rights into disrepute, and in recent years patentees have found some difficulty in making sales in this way, unless the device is of unusual great novelty and attraction to householders or the general public.

Selling by Territorial Rights.

Occasionally, however, there are patents issued for meritorious inventions that are susceptible of this mode of procedure, and which can be disposed of to the greatest advantage by territorial grants. Such inventions as household novelties possessing great merit and utility have been most successfully placed upon this plan, but it must be remembered that the value of the system rests upon its capabilities of effecting sales of the manufactured article to a vast proportion of the people.

In selling territorial rights it is a mistake to begin with the small places with the idea of working the business up and effecting larger sales on the basis of the smaller ones ; it is better to shove the sales as much as possible in the start, and after

the more valuable portion of the territory is disposed of, proceed with the balance until it ceases to be profitable.

Experience teaches that it is usually advisable to accept any reasonable offer made for a small right, even if it does not come up to the patentee's estimate of its value, as he has plenty of other territory left, and may lose much time and money in finding another in the same territory willing to pay more ; besides, the purchaser of such a right may, by his energy and good judgment, advertise the invention in such a way as to greatly benefit the patentee in making further sales.

Some patentees employ good and reliable special agents to travel and dispose of the patent rights ; others advertise for and appoint State agents to sell their respective county rights. In either case these agents expect to make money by the operation, and require a liberal proportion of the proceeds for their remuneration ; generally speaking, they will require about one-third the selling price, unless the patentee can show that the rights will sell readily, in which case the rating can be made lower.

The patentee may also sell licenses under his patent ; that is, in consideration of a certain sum, the patentee licenses a manufacturer to make the invention at his own place of business ; it being a personal privilege

Granting Licenses.

and is not transferable unless its terms so state.

Unless there are a great many manufacturers in the line of industry to which the patent relates, and unless the invention has real merit so that it will be readily adapted by the manufacturers, the patentee cannot hope to realize any considerable amount from selling shop-rights alone. As a general thing, patents for mechanical inventions can be disposed of to better advantage by other means, or by selling shop-rights in connection with other methods; for example, if the patentee was selling his patent by territorial grants, he might grant shop-rights in such territory as he has not sold; or if he is placing the patent upon non-exclusive royalty contracts, he could grant shop-rights in such portions of the territory as he does not contemplate using otherwise.

Some inventions, such as methods or processes, as a general rule, have to ultimately be sold by licenses. Such patents can be employed most profitably by selling licenses, county and State rights; thus, in the case of a method of constructing fences, the patentee could sell State and county rights to parties, who in turn could grant farm rights, etc.

The license and royalty plan is perhaps the best and most popular method with inventors for realizing from their inventions. This, in effect, in-

volves a contract between the patentee and the manufacturer, by which the latter in consideration of a license to manufacture the article covered by the patent, agrees to pay the patentee a certain specified sum as royalty for each article manufactured or sold bearing the patented improvement.

Placing upon Royalty.

Placing a patent on royalty is ordinarily taking chances, but if the patentee has full confidence in his article selling well, he should by all means take royalty in preference to selling the patent in its entirety. Many valuable patents are sold by their owners for from $1,000 to $10,000, which yield the purchasers, when the article is on the market and selling well, as much as $25,000 annually in profits. This calls to mind a patent for which at the outset was doubtfully offered $3,000, but before the negotiations terminated, the patentee succeeded in placing it upon exclusive royalty; this was less than four years ago, and since that time the manufacturers have paid the patentee over $50,000 as royalty, and have recently offered $100,000 for the patent.

In making royalty contracts with parties, the patentee should investigate the standing, rating, and capabilities of the manufacturer, and, above all, should be certain that the parties have the right motive in view, and that the contract is so drawn that it will fully protect his own interests.

Many patentees have been caught by manufacturers offering large royalties for the sole purpose of gaining possession of the patent, that they might pigeon-hole it, in order to keep the article out of the market, so that the sale of some similar article in which they are interested would not be interfered with by the introduction of a similar or better article, such as the patent anticipates.

There are others who propose and make royalty contracts with patentees with no other object than that of making the special tools, patterns, dies, etc., for which they charge the patentee an extortionate price.

The best and safest way for the patentee to guard against having his patent tied up is to bind the parties to do certain things in the way of pushing the sales, making the necessary tools at their own expense, and commencing its manufacture within a reasonable time, paying an advance royalty, or annexing some such condition to the agreement by which they will be the loser should they fail to push the inventor's interests.

Unless it cannot be otherwise arranged, the patentee should not transfer his rights merely in consideration of receiving a certain sum on each article sold, as however sterling the character of the manufacturer, there would be no certainty of the sales being pushed. The patentee should endeavor to get the manufacturer to guarantee that

the royalties shall amount to at least a certain pre-stipulated sum each year, or within a period of time, and that such sum shall absolutely be paid to him by the manufacturer, irrespective of sales. This insures that the manufacturer will be obliged to push the sales of the article, and do it justice, since if he neglects his duty purposely, or from lack of energy, he is out of pocket, and the patentee is sure of a certain income, with the addition of a possible fortune that unprecedented sales may yield him. However, manufacturers are not always willing to agree to this condition, unless the guaranteed amount is exceedingly reasonable ; they will usually simply agree to do their best, and if the sales do not reach a certain figure each year, the patentee shall have the option of cancelling the agreement, and receiving back the patent free and clear.

Royalty licenses can either be exclusive or non-exclusive ; that is, with an exclusive contract the manufacturer has the exclusive right to manufacture the article, excluding all others ; non-exclusive is simply a shop-right, in consideration of which the manufacturer agrees to pay the patentee or owner of the patent a stipulated price or percentage upon each article made or sold. The license can also be exclusive in a certain section, county, State, or a number of States, as may be agreed upon.

Any number of conditions that may be agreed upon may be annexed to and form a part of the contract, and such an agreement should be drawn up in compliance with the terms and conditions agreed upon by a competent attorney, or one skilled in matters of this kind.

Manufacturing and Forming Companies.

If the patentee has a really good invention, often he cannot do better than to retain the patent and work it himself, in case he has the ability to do so. If he cannot conduct the manufacturing alone, he may be able to secure a partner with just sufficient funds, and equal common sense and business acumen, to add the necessary elements to the firm to achieve success.

In some cases, if the patentee does not wish to retain the whole patent for his own use, an excellent plan is to commence the manufacture of the invention in a suitable locality, and after the business is so far under way as to show progress and profit, then sell out the business with license under the patent. To illustrate: a gentleman in Illinois, having obtained a patent on a farming implement, succeeded in interesting a party in his own neighborhood to join with him in its manufacture, which soon proved successful and remunerative, and in a short time he was able to sell out his interest in the business to his partner, with license under the patent, after which the patentee

started its manufacture in a number of places elsewhere, and, at the same time, granting licenses and selling territory in still other sections, where he was unable to work the invention. In this way he made a fair fortune from his invention, realizing about as much from each business established as he could have probably obtained for the entire patent if sold outright at first.

In this manner the patentee, with a valuable patent on an article of general usefulness, could go on and establish its manufacture in any number of places, and sell out with license under the patent. If the first experiment is successful, it is an easy matter to carry the method out in other places, and the business can be readily disposed of anywhere, if it can be shown to be on a paying basis.

To Organize Stock Companies.

In recent years many inventors have been quite successful in organizing stock companies on the basis of their patents. This is considered one of the best ways for handling patents for large and promising inventions, and it is a method that any patentee, with ordinary business ability, should be able to carry out successfully, providing his invention is of sufficient merit and importance to form a suitable basis for a successful stock company.

Many stock companies are incorporated under

the laws of New Jersey, but it is believed the State of West Virginia is also very favorable to corporations. The entire expense for incorporating a company under the laws of the latter State should not exceed $150. The company can be incorporated for any amount; large or small, one hundred dollars or five millions, cost and fees being the same. The incorporators need not be residents of the State. No annual statements required. The meetings of the directors can be held at any place, and need not be held in the State where the charter is granted.

Before applying for a charter for a corporation or stock company, the patentee should mention his plan to some of his friends and get five persons who will promise to subscribe for one or more shares of the stock and act as incorporators of the company.

Next he should secure the services of a reliable attorney, familiar with corporation laws, to prepare the necessary articles of incorporation and legal papers. The attorney will advise the patentee how to proceed properly in organizing his company, and as to the securing of the stock certificates, subscription blanks, seal, etc. These, including the attorney's fee, should not cost the patentee more than $50.

It is well to have some stationery printed with the proposed name of the company and business

displayed thereon; and also a prospectus published, setting forth the invention and the plans of the company for introducing it, etc.

Quite often the patentee can find enough idle capital in his immediate neighborhood to float a good portion of the stock. Capital is more easily secured by the formation of a stock company than by any other means, as people can subscribe for small or large amounts, and they often prove good investments.

In soliciting subscriptions for stock, it is desirable to get as many prominent and influential men to buy one or more shares at first to head the list—their names will be a great aid in making further sales. Ordinarily the promoter only collects ten per cent. of the amount subscribed, the balance being subject to the call of the board of directors.

After it is ascertained that the shares or stock are being rapidly subscribed for and selling fully up to expectation, the patentee can have the incorporators sign the charter application and have the attorney file it with the proper State authorities. This will cost the patentee about $100 more, for State tax, attorney fees, etc.

When sufficient stock has been subscribed for, a meeting of the stockholders should be called to elect directors, and to transact such other business as may be deemed necessary in regard to

locating and building the plant and getting the company in shape.

The patentee should receive about one-half the capital stock in consideration of his transferring his rights and franchises to the corporation, the remainder of the stock is sold for the benefit of the company to create a working capital. The patentee may sell a portion of his stock, if he desires, but should also retain a good portion of it to show his own confidence in the business.

After the meeting of the stockholders, the direction of the business will probably be taken out of the hands of the inventor, and the control will lie in the board of directors of the company. As a rule it is better that the inventor does not take an active part in the management of the company's affairs, unless he is specially fitted for the position.

If the company is provided with ample capital, and if the business manager is a competent man, there is little chance of failure if the invention has real merit.

Trading as a Last Resort.

Patentees are sometimes offered securities or other property in trade for a patent. It is not deemed a wise course by most inventors to consider any proposition for a trade, especially in the early life of a patent. Only as a last resort, after failing to realize from a patent by any other means, is it

advisable to trade a patent ; and, before finally agreeing upon a trade, the patentee should have a reputable attorney to look fully into the value and title of the property offered. He should also insist upon receiving an abstract of title, or a title guarantee from a reliable title insurance company.

Unless known to himself, the patentee should never engage the services of an attorney or broker recommended by the parties offering the trade to look into the value and title of the property. Inventors should be on the lookout for a set of sharpers who make a business of offering worthless securities and property in exchange for patents.

CHAPTER VII

FOREIGN PATENTS

In view of the fact that many questionable patent agents, both in this country and abroad, will endeavor to lure the patentee into the idea of taking out foreign patents after the issue of the United States patent, it is deemed advisable to give the reader a few pointers on foreign patents.

Do Foreign Patents Pay?

The first question that naturally arises in the inventor's mind regarding foreign patents, is, "Will they pay?" From a patent solicitor's stand-point, any invention that will pay in this country will pay in foreign countries, or at least that would be the general impression formed from their literature and letters; although experience, in nine cases out of ten, will answer in the negative, unless the inventor has an exceptionally meritorious invention that is especially adaptable to the needs of a certain foreign country, and even if the inventor have these qualifications in his invention, unless he has some means whereby he can see his way clear to introduce and promote his invention in

such foreign country, he can hardly expect to realize much from his patents. Moreover, in many of the foreign countries, the cost of securing the patent and the tax thereon are so excessive, and the rules regarding the manufacture and working so exacting, as to render it almost impossible for anyone not able to expend a large amount, to secure and maintain the patent.

It cannot be denied, on the other hand, that many inventors have realized equally as much from their foreign patents as from their home patents; but these inventors generally have ample means at their command, good business management, and able associates abroad to promote their interests. Any inventor having these advantages can generally succeed with foreign patents; without them it is a futile undertaking.

Another point sometimes advanced in favor of foreign patents is the fact that our export trade has grown so in recent years that it is sometimes a protection to the American manufacturer to have the article patented in the foreign markets; this, however, in nearly all the foreign countries is invalidated by their curious laws requiring the patent to be worked in that country within a comparatively short time after the patent is granted; England is an exception.

While the American inventor enjoys the benefit of the repute and fame they have justly won by

their ingenuity and inventive genius, and while American inventions are usually held in great favor in foreign countries, it will be found that it is a very exceptional case indeed where he can realize anything like as much for any foreign patent as he can from the American patent; especially is this true in England. There are many things which govern the price of foreign patents which cannot be considered in the brief space of this chapter.

Their Selling Value.

In all the principal European countries, patents are granted to the first introducer, whether he be the true inventor or not; and it is not an uncommon occurrence for persons in these countries to manufacture, use, and sell American inventions shortly after receiving the United States *Official Gazette*, which reaches them in about ten days after the American patent is issued, and from the claims and drawings therein published, a person skilled in the arts to which the patent appertains very often can gain sufficient knowledge of the invention to put it into practice and secure a patent thereon, thus working to invalidate any patent that may be secured thereafter in such country.

The Introducer.

The United States patent law contains a special provision for the benefit of inventors who desire to protect their inventions in other countries, in that it provides that after the home patent is

allowed the invention may remain in the secret archives of the Patent Office for a period of six months, if the patentee so elects; also under the law which went into effect January, 1898, the prior issue of a foreign patent will not now affect the duration of the United States patent; thus, the patentee is enabled to arrange for patents in other countries in advance of all other persons and before the invention is published, and if he fails to avail himself of this provision he is debarred from securing a valid patent in nearly all the foreign countries by what is known as "the law of publication." Canada is the principal exception in this case. Therefore patentees are advised to pay no attention to the frantic efforts of some unscrupulous firms and individuals who try to induce them to take out foreign patents upon their inventions, which they well know, if granted, would not be valid, and which would be declared absolutely worthless when it was shown that the invention had first been patented in the United States.

When Only Valid Patents Can Be Obtained.

No valid patent can be obtained in France, Germany, Belgium, or Japan after the issue and publication of the United States patent; nor can a valid patent be obtained in Great Britain, Austria, Italy, or Mexico after the arrival of the *Official Gazette* and copies of the United States patent in these countries, which are mailed at Washing-

ton on the day the patent is issued, and reaches Europe in about ten days.

The International Convention.

By the "International Convention for the Protection of Industrial Property," entered into by Belgium, Brazil, France, Great Britain, Guatemala, Italy, Netherlands, Norway, Portugal, San Domingo, Servia, Spain, Sweden, Switzerland, Tunis, and the United States, patentees of these countries are allowed six months from the time their applications were originally filed in which to apply for patents in any of the other countries named, and one month additional is granted where the countries are beyond the sea; that is, if an American patentee file his application in any of the European countries just enumerated within seven months after his application is filed in the United States, his foreign application will be given the same date as in this country, and the patent therefor held valid as against any subsequent patent that may have been granted to any person for the same invention, and also held valid as against the law of publication. Seven months from the time the United States application is filed is, however, a very close margin, as it frequently requires a greater part of this period to secure a patent in this country.

After the United States patent is issued, the Government does not exact any additional payments, in the nature of taxes or licenses, during the

whole term for which the patent is granted; such, however, is not the case with foreign patents, as nearly all of them are subject to an annual tax. This fact is not always made plain to the inventor contemplating foreign patents by his attorneys or agents in their brief accounts of foreign patent laws, which inventors usually accept as their guide.

Excessive Taxes on Foreign Patents.

A British patent, at the expiration of the fourth year, is subject to a tax of $25, which amount will be increased $5 each succeeding year as long as the patent remains in force. There is a tax of $20 a year upon the French patent, and upon the German patent there is an annual tax commencing with $12.50 for the second year, and increasing by same amount for each subsequent year thereafter, making the last year's tax $175, or a tax of over $1,300 for the entire fifteen years for which the patent is granted. The Belgium patent is subject to an annual tax of $5 for the second year, and increasing at the rate of $2 each succeeding year. In Switzerland, Russia, Italy, Spain, Hungary, Norway, and Sweden patents are subject to an annual tax of various amounts, increasing year by year to the end of the term for which the patent is granted.

There are absolutely no conditions annexed to the United States patent as to working or otherwise, and it remains valid during the term for which

it was granted, whether it is worked or whether it is allowed to sleep. With the exception of England, in all the other principal foreign countries the patent has to be worked in order to maintain its validity; as, in the case of Belgium, within one year after its having been commercially worked elsewhere; within one year from the grant of the patent in Denmark, Austria, and Hungary; in Canada, France, Spain, Portugal, and Italy, within two years; and within three years in Germany, Switzerland, Norway, Sweden, and Japan; thus, unless the patentee has exceptionally good facilities for working or disposing of his foreign patents, he will hardly be able to maintain them.

Law of Compulsory Manufacture.

Before making application for a patent in any foreign country, the inventor should first satisfy himself that his invention is adapted to the uses and needs of such foreign countries in which he contemplates securing a patent, and if found to be adaptable in a certain country equally as well as the United States, he should next ascertain what prospects and means he has for realizing from the different patents in question, and, lastly, he should not authorize the filing of an application until he fully understands the legal requirements in reference to the working of the invention, the amount of taxes or other fees upon the patent, the duration and kind of

Advice.

patent, and what protection is really afforded under the laws. In some countries the laws are such as to render a patent of little value to the patentee in protecting his rights.

Some of the foreign countries have several kinds of patents, as, for example, Germany issues a special kind of patent, known as the "Gebrauchsmuster" patent, which many attorneys advertise to secure at a very low rate, and which inventors often understand to be something like the regular patent, but upon examining into its nature it will be found to be of little, if any, value or protection to the American inventor.

ABOUT CANADIAN PATENTS

The geographical nearness of Canada to the United States, and the intimate commercial relations existing between the two countries, render Canada, in one sense, a part of the industrial market of America; and owing to its liberal patent laws, which are based closely upon our own, inventors generally find it advantageous to protect their interests in this country, which can be done from time to time by a very small outlay, and thus giving the inventor the advantage of disposing of his patent or dropping it if not found remunerative, before expending the total cost of the patent.

The commercial and manufacturing interests of Canada are extensive, increasing yearly, and are closely knit with our own. If the invention is not protected in Canada, it is sometimes manufactured there and sent here without paying royalty to the inventor.

Copies of the "Rules and Forms of the Canadian Patent Office" and "The Patent Act" can be obtained upon application to the Hon. Commissioner of Patents, Ottawa, Canada. Section 8 of the Patent Act, revised May, 1898, provides:

"Any inventor who elects to obtain a patent for his invention in a foreign country before obtaining a patent for the same invention in Canada, may

obtain a patent in Canada, if the same be applied for within one year from the date of the issue of the first foreign patent for such invention ; and,

"If within three months after the date of the issue of a foreign patent, the inventor give notice to the Commissioner of his invention to apply for a patent in Canada for such invention, then no other person having commenced to manufacture the same device in Canada during such period of one year, shall be entitled to continue the manufacture of the same after the inventor has obtained a patent therefor in Canada, without the consent or allowance of the inventor ; and,

"Under any circumstances, if a foreign patent exists, the Canadian patent shall expire at the earliest date at which any foreign patent for the same invention expires."

Under the section just cited the patentee has three months, after the issue of his patent, within which to protect his interests in Canada. If within these three months he has not sufficiently demonstrated the commercial value of his home patent, and the advisability of taking out a Canadian patent, he is advised to give notice to the Commissioner of Patents, Ottawa, of his intention of doing so, which will fully protect his interests for one year, as under the above provision ; and if the patentee fail to give this formal notice, he cannot obtain redress from any person who has

commenced to manufacture his invention in Canada during the year.

There is also an advantage sometimes in giving this formal notice within three months and delaying the grant of the patent for one year, as the patentee is allowed to import the patented article into Canada during one year only, after the grant of the Canadian patent.

The construction or manufacturing of the invention in Canada must be commenced within two years from the date of the patent, and continuously carried on from that time, though the extension of this time may be secured upon timely application to the Commissioner, giving any good and proper reason. The time for importation is also sometimes extended upon proper application.

Canadian patents are granted originally for a term of eighteen years, the Government fee being $60 for the eighteen years, but at the election of the patentee this fee may be divided into three payments of $20 each, as follows : $20 at the time of the grant, $20 at the expiration of the sixth year, if the owner desires to keep the patent alive, if not he can allow the patent to become forfeited ; and at the end of the twelfth year, if it is still desired to maintain the patent, the remaining fee of $20 may be paid. If the patentee in the meantime assigns his patent, the assignee will pay the required government fees at the end of the sixth

and twelfth years, if it is desired to maintain its validity.

The Canadian patent covers and affords full protection in the following provinces:

Provinces.	Area, Square Miles.	Population, 1891.
British Columbia	383,300	98,173
Manitoba	73,956	187,926
New Brunswick	28,200	321,270
Nova Scotia	20,600	450,523
Ontario	222,000	2,114,476
Quebec	347,350	1,488,586
Prince Edward Island	2,000	109,088
Total	1,068,406	4,770,041

Selling Canadian Patents.

In selling Canadian patents, the patentee will proceed in much the same way as in the United States, though he cannot expect, nor should he ask, more than about one-third as much for the Canadian patent as he receives, or expects, from the United States patent. Patents are not as readily sold in Canada as here, but if the inventor has a useful invention of merit, which is being manufactured profitably in the United States, he will have no trouble in disposing of his Canadian patent at a satisfactory price.

It is in nearly all cases advisable for the inventor to first put his invention upon the market in the United States before trying to realize from his Canadian interests, as it will be found difficult to interest Canadian capital in a patent that has not been first put into practice here; and if the patentee be able to dispose of his Canadian patent at all, it is usually for a very insignificant sum; whereas, on the other hand, if the patentee fully protects his interests there, and proceeds to put the invention upon the home market, he will not only be able to present his Canadian patent in a more favorable and forcible way by proving its commercial value, but he will undoubtedly get better offers, and realize full value for his Canadian interests, in exact proportion to the success of his invention in the United States.

POPULATION OF

CANADIAN CITIES

(*Compiled from the Census of* 1891)

Montreal	216,650	St. Catharines	9,170
Toronto	181,220	Chatham, Ont.	9,052
Quebec	63,090	Brockville	8,793
Hamilton	48,930	Moncton	8,765
Ottawa	44,154	Woodstock, Ont.	8,612
St. John	39,179	Trois Rivières	8,334
Halifax	38,556	Galt	7,535
London	31,917	Owen Sound	7,497
Winnipeg	25,642	Berlin	7,425
Kingston	19,264	Levis	7,301
Victoria, B. C.	16,841	Cornwell	6,805
Vancouver, B. C.	13,685	St. Hyacinthe	7,016
St. Henri	13,415	Sernia	6,693
Brantford	12,753	Sorel	6,669
Charlottetown	11,374	New Westminster	6,641
Hull	11,265	Fredericton	6,502
Guelph	10,539	Dartmouth, N. S.	6,249
St. Thomas	10,370	Yarmouth	6,089
Windsor	10,322	Lindsay	6,081
Sherbrooke	10,110	Barrie	5,550
Belleville	9,914	Valleyfield	5,516
Peterboro	9,717	Truro	5,102
Stratford	9,501	Port Hope	5,040
St. Cunegonde	9,293		

CHAPTER VIII

ABSTRACT OF DECISIONS

THE following digest will be found to contain much useful information for the patentee, it being a carefully selected list of decisions affecting assignments, territorial grants, licenses, State laws, etc.; including those rendered by the Supreme Court of the United States, the Circuit Court of Appeals, State Courts, and of various Commissioners of Patents, all of which decisions enunciate well-settled and controlling principles of Patent Law.

Assignments.

Assignments of patents are not required to be under seal. The statutes simply provide that "every patent, or any interest therein shall be assignable in law by an instrument in writing." (*Gottfried* vs. *Miller*, *U. S. S. C. Decided Jan. 23, 1882.*)

A contract assigning a patent and all future improvements thereon is enforceable against assignees of such improvements who take notice of the contract. (*Westinghouse Air Brake Co.* vs. *Chicago Brake and Mfg. Co.*, *85 F. R.*, *786.*)

Each co-owner of a patent may use his right

without the concurrence of the others and license at will. (*Washburn & Moen Co.* vs. *Chicago Wire Fence Co., 109 Ill., 71.*)

Owners of a patent are tenants in common, and each, as an incident of his ownership, has the right to use the patent or manufacture under it. But neither can be compelled by his co-owner to join in such use or work, or be liable for the losses which may occur, or to account for the profits which may arise from such use. (*De Witt* vs. *Elmira Nobles Mfg. Co., 12 N. Y. Spur., 301.*)

Joint owners of a patent right are not copartners, and in the absence of any express contract each is at liberty to use his moiety as he may think fit, without any liability to or accounting to the other for profits or losses. (*Vose* vs. *Singer, 4 Allen* (*Mass.*), *226; vide Pitt* vs. *Hall, 3 Blatch., 201.*)

Although an assignment of patent is not recorded within three months, it is binding on the assignor, and he cannot sell the patent again. (*Ex parte Waters, Com. Dec., 1899, p. 42.*)

A verbal license or interest in an invention has no effect as against a subsequent assignee without notice of such verbal license or interest. (*U. S. S. C., Gates Iron Works* vs. *Fraser et al., 1894, C. D., 304.*)

An assignment to assign future patents, in consideration of the assignee's paying the expense of

taking them out, is broken by his refusal to pay for and take out a particular patent when requested, and a subsequent assignment to another conveys a perfect title. (*Buck* vs. *Timony*, *78 Fed. Rep.*, *487*.)

Any assignment which does not convey to the assignee the entire and unqualified monopoly which the patentee holds in the territory specified, or an undivided interest in the entire monopoly, is a mere license. (*Sanford* vs. *Messer*, *2 O. G.*, *470*.)

When a party does license, grant, and convey any invention which he may hereafter make, this gives only an equitable right to have an assignment made, and this right may be defeated by assignment of the patent to a purchaser for value without notice of this equity. (*Regan Vapor Engine Co.* vs. *Pacific Gas Engine Co.* (*Nineth Cir.*), *7 U. S., App.*, *73*.)

Territorial Grants.

A territorial grantee cannot be restrained from advertising and selling within his territory, even though the purchasers may take the patented article outside the vendor's territory. (*Hatch* vs. *Hall*, *22 Fed. Rep.*, *438*.)

One who buys patented articles of manufacture from an assignee for a specified territory becomes possessed of an absolute property in such articles, unrestricted in time or place. (*U. S. S. C.*, *Keller et al.* vs. *Standard Folding Bed Co.*, *71 O. G.*, *451*.)

The sale of a patented machine by one authorized to sell, conveys the whole ownership to the purchaser, who may sell it again to another. (*Morgan Envelope Co.* vs. *Albany Perforated Wrapping Paper Co., 152 U. S., 425.*)

Licenses.

Every person who pays the patentee for a license to use his process becomes the owner of the product, and may sell it to whom he pleases, or apply it to any purpose, unless he binds himself by covenants to restrict his rights of making and vending certain articles that may interfere with the special business of some other licensee. (*Met. Washing Machine Co.* vs. *Earl, 2 Fish., 203; 2 Wall., Jr., 230.*)

A license is not forfeitable for non-payment of royalties in the absence of express provisions to that effect. (*Wagner Typewriter Co.* vs. *Watkins, 84 Fed. Rep., 57; 1898.*)

A shop right is a personal license and is not assignable. (*Gibbs* vs. *Hoefner, 19 Fed. Rep., 323; 22 Blatch., 36.*)

A license to a person to use an invention only "at his own establishment" does not authorize a use at an establishment owned by him and others. (*Rubber Co.* vs. *Goodyear, 9 Wallace, 788.*)

A license is not transferable unless its terms so state. (*Olmer* vs. *Rumford Chemical Co., 109 U. S., 75.*)

A license merely to make and not to sell does

not impair the patent owner's right to sue for infringement outside of the license; and the purchaser of the licensee's tools and materials would not carry the right to sell the product made thereon. (*American Graphophone Co.* vs. *Walcut, 87 Fed. Rep., 556; 1898.*)

A license to use a machine carries with it the right to repair the machine, and replace worn parts until the essential original parts of the machine have disappeared. (*Robinson on Patents, Sec. 927.*)

A lawful sale of a patented article by a patentee or grantee, within his own territory, carries with it the right to use such article throughout the whole United States. (*Adams* vs. *Burke, 5 O. G., 118; Hobbie* vs. *Smith, 27 Fed. Rep., 656.*)

When an applicant in certain instruments assigned his right, title, and interest in an invention, retaining for himself the exclusive right to employ the invention in the manufacture of a certain class of machines, Held, that such instruments do not convey the entire interest in the invention or any undivided part thereof, and they are construed to be nothing more than licenses. (*Ex parte Rosback, 89 O. G., 705. Decided Oct. 5, 1899.*)

An implied license to use a patented improvement without payment of any royalties during the continuance of employment of the inventor, and

thereafter, on the same terms and royalties fixed for other parties, is shown where the inventor applies the patent to his employer's work without any agreement for compensation for its use further than a notice that he would require pay after his employment terminated. (*Keys* vs. *Eureka Consol. Min. Co., U. S. S. C., 158 U. S., 150.*)

A breach of a covenant in a license does not work a forfeiture of the license unless it is so expressly agreed. (*Consol. Middlings Purifier Co.* vs. *Wolf, 37 O. G., 567.*)

A patent right, like any other personal property, is understood by Congress to vest in the executors and administrators of the patentee, if he dies without having assigned it. (*Shaw Relief Valve Co.* vs. *City of New Bedford, 19th Fed. Rep., 758.*)

Patent Title.

A patent to a dead man at the time of its grant is not void for the want of a grantee, but vests in his heirs or assigns. (*U. S. S. C., De La Vergne Ref. Machine Co.* vs. *Featherstone, 1893, C. D., 181.*)

A court of equity may direct a sale of an inventor's interest in his patent to satisfy a judgment against him, and will require the patentee to assign as provided in Rev. Stat., Sec. 4898, and if he refuses, will appoint a trustee to make the assignment. (*Murray* vs. *Ager, 20 O. G., 1311.*)

A patent right cannot be seized and sold on execution. (*Carver* vs. *Peck, 131 Mass., 291.*)

A receiver cannot, under his general powers, convey the legal title to a patent (*Adams* vs. *Howard*, *23 Blatch.*, *27*), but a court may compel an insolvent to assign his patent to a trustee or receiver. (*Pacific Bank* vs. *Robinson*, *20 O. G.*, *1314*; *Murray* vs. *Ager*, *20 O. G.*, *1311.*)

A patentee who assigns his patent cannot, when sued for infringement, contest the validity thereof. (*Griffith* vs. *Shaw*, *89 Fed. Rep.*, *313.*)

RULES OF PRACTICE

The following from the "Rules of Practice in the United States Patent Office" may be perused with interest to the patentee; a copy of which, together with a copy of the "Patent Laws," will be mailed free to any person upon addressing the Hon. Commissioner of Patents, Washington, D. C., requesting the same; these being the only books or pamphlets published by the Office for gratuitous distribution.

Every patent or any interest therein shall be assignable in law by an instrument in writing; and the patentee or his assigns or legal representatives may, in like manner, grant and convey an exclusive right under the patent to the whole or any specified part of the United States. Interests in patents may be vested in assignees, in grantees of exclusive sectional rights, in mortgagees, and in licensees.

Assignments.

An assignee is a transferee of the whole interest of the original patent or of an undivided part of such whole interest, extending to every portion of the United States. The assignment must be written or printed and duly signed.

Assignees.

A grantee acquires by the grant the exclusive right under the patent to make and use and to grant to others the right to make and use, the thing patented within and throughout some specified part of the United States, excluding the patentee therefrom. The grant must be written or printed and be duly signed.

Grantees.

A mortgage must be written or printed and duly signed.

Mortgages.

A licensee takes an interest less than or different from either of the others. A license may be oral, written, or printed, and if written or printed, must be duly signed.

Licensees.

An assignment, grant, or conveyance of a patent will be void as against any subsequent purchaser or mortgagee for a valuable consideration without notice unless recorded in the Patent Office within three months from the date thereof. If any such assignment, grant, or conveyance of any patent shall be acknowledged before any notary public of the several States or territories, or the District of Columbia,

Must be Recorded.

or any commissioner of the United States Circuit Court, or before any secretary of legation, or consular officer authorized to administer oaths or perform notarial acts under Section 1750 of the Revised Statutes, the certificate of such acknowledgment, under the hand and official seal of such notary or other officer, shall be *prima facie* evidence of the execution of such assignment, grant, or conveyance.

No instrument will be recorded which does not, in the judgment of the Commissioner, amount to an assignment, grant, mortgage, lien, encumbrance, or license, or which does not affect the title of the patent or invention to which it relates. Such instruments should identify the patent by date and number; or, if the invention is unpatented, the name of the inventor, the serial number, and date of the application should be stated.

Conditional Assignments.

Assignments which are made conditional on the performance of certain stipulations, as the payment of money, if recorded in the office, are regarded as absolute assignments until cancelled with the written consent of both parties, or by the decree of a competent court. The office has no means for determining whether such conditions have been filled. (*Rev. Stat., Sec. 4898.*)

STATE LAWS ON SELLING PATENTS

In some States, laws have been passed by which attempts have been made to regulate or prevent the sale of patent rights within their borders, by imposing upon patentees or their agents certain State restrictions, such as requiring the filing of copies of patents, making and filing proofs, taking out licenses, procuring certificates, complying with forms, or prescribing the terms of a note to be given for a patent.

While it has never been squarely brought before the United States Supreme Court, with the result that much conflicting legislation has been enacted by the different States, it may be said, as a general proposition, that a State or municipality, through the medium of its Legislature or officials, has no constitutional right to make or enforce laws which in any way affect or control the transfer, sale, or other disposition of United States Letters Patent; or to interfere in any manner with the patentee going into the open market anywhere to sell his rights conferred by the patent.

It is a well-established principle of law that Congress has exclusive right and power to legislate on the subjects specially assigned to it by the Constitution, while power is delegated to the several States to legislate on those subjects not

thus expressly placed within the control of Congress. It would seem clear that there can be no State interference with the rights which are incident to the grant of Letters Patent and expressly conferred thereby.

Ohio was the first State attempting to place restrictions upon the handling of patent rights, which, in 1868, passed an act requiring any person, before offering for sale a patent right in any county, to submit the patent to the Probate Judge of the county, and make affidavit before said judge that the patent was in force, and that the applicant had the right to sell, and also requiring that any written obligation taken on the sale of such right should bear on its face the words, "Given for a Patent Right."

The portion of the Ohio statute relating to the making and filing proofs was subsequently made the law in Illinois, Minnesota, Indiana, Nebraska, and Kansas, while the requirement that written obligations given for a patent right should bear such statement written upon its face was made the law in Vermont, Michigan, Pennsylvania, Wisconsin, New York, Connecticut, and Arkansas.

In view of the decisions rendered by the Supreme Court of the United States in the cases of *ex parte* Robinson, 2 Bissel, 309, and Webber *vs.* Virginia, 103 U. S., 347; 20 O. G., 136, some of the States repealed their statutes relating to the

filing of proofs, while others did not—notably Indiana and Kansas, where the statute still remains in force.

While the Supreme Court in the above cases did not decide the constitutionality of the State statutes, it was clearly indicated that property in inventions existed by virtue of the laws of Congress, and that no State had any right to interfere with its enjoyment, or to annex conditions to the grant, and that the patentee had a right to go into the open market anywhere in the United States and sell his property. It also established the proposition that a State may require the taking out of a license for the sale of the manufactured article covered by the patent; and the patentee should keep in mind the distinction between selling patents, or patent privileges, and the selling of goods or manufactured articles, as all who sell goods, whether patented or not, must conform with the local and State laws relating to same.

The statute requiring the insertion in written obligations of the words, "Given for a Patent Right," has been declared unconstitutional by the higher State Courts in Illinois, Michigan, Minnesota, and Nebraska, and by the Circuit Courts in the southern district of Ohio, and in the district of Indiana; while its validity has been sustained by the courts of last resort in New York, Pennsylvania, Ohio, Indiana, and Kansas. Therefore, the

validity of the State statutes on the point referred to may be regarded as finally established in the last-named States until brought before the Supreme Court of the United States, which there is every reason for believing will declare the statutes unconstitutional.

CHAPTER IX

THE TRANSFER OF PATENT RIGHTS

It frequently occurs to the patentee that a knowledge of the legal requirements of the transfer of patent rights would save him much time and trouble. Patentees should carefully scrutinize all papers offered by the parties in whose favor they are drawn, and, if possible, he should have his attorney to examine them.

There are three classes of persons in whom the patentee can vest an interest of some kind. They are an assignee, a grantee of an exclusive sectional right, and a licensee.

"An *assignee* is one who has transferred to him in writing the whole interest in the original patent, or any undivided part of such whole interest in every portion of the United States. And no one, unless he has such an interest transferred to him, is an assignee.

Assignee, Grantee, and Licensee Defined.

"A *grantee* is one who has transferred in writing the exclusive right under the patent, to make and use, and to grant to others to make and use, the thing patented, within and throughout some

specified part or portion of the United States. Such right must be an exclusive sectional right, excluding the patentee therefrom.

"A *licensee* is one who has transferred to him in writing, or orally, a less or different interest than either the interest in the whole patent, or an undivided part of such whole interest, or an exclusive sectional interest." (*Potter* vs. *Holland*, *1 Fish*, *327*.)

The Language of Law.

If a man were to give another an orange he would simply say, "I give you this orange"; but if the transaction be intrusted to a lawyer to draw up according to the requirements of law, says the *Observer*, he would most probably put it in the following language: "I hereby give, grant, and convey to you all my interest, right, title, and advantage of and in said orange, together with its rind, skin, juice, pulp, and pits, and all right and advantage therein with full power to bite, suck, cut, or otherwise eat the same or to give the same away, as fully and effectually as I, the said A. B., am now entitled to cut, bite, or otherwise eat the same, or give away the same with or without the rind, skin, juice, pulp, or pits; anything hereinbefore or hereafter or in any other deed or deeds, instruments of nature or kind whatsoever to the contrary in anywise notwithstanding."

It is always better and more satisfactory to

have assignments, royalty contracts, agreements, etc., drawn up specially to accord with the facts, details, and covenants of each particular case ; and there is no one probably better able to do this than the attorney who secured the patent. However, if in the case the parties to the transaction cannot well delay proceedings to have the papers prepared by an attorney, by adhering to the following forms in any such transactions, both the purchaser and seller may rest assured that their rights are protected.

ASSIGNMENT OF ENTIRE INTEREST IN LETTERS PATENT

Whereas, I, Richard Doe, of Columbus, County of Franklin, State of Ohio, did obtain Letters Patent of the United States for an improvement in Typewriting Machines, which Letters Patent are numbered 000,000, and bear date January 1, 1901 ; and whereas I am now sole owner of said patent, and of all rights under the same ; and whereas the Ohio Typewriter Company, of Cincinnati, County of Hamilton, and State of Ohio, is desirous of acquiring an interest in the same :

Now, *therefore*, to all whom it may concern, be it known, that for and in consideration of the sum of five thousand dollars to me in hand paid, the receipt of which is hereby acknowledged, I, the said Richard Doe, have sold, assigned, and trans-

ferred, and by these presents do sell, assign, and transfer unto the said Ohio Typewriter Company, the whole right, title, and interest in and to the said improvements in Typewriting Machines, and in and to the Letters Patent therefor aforesaid; the same to be held and enjoyed by the said Ohio Typewriter Company, for their own use and behoof, and for the use and behoof of their legal representatives, to the full end of the term for which said Letters Patent are or may be granted, as fully and as entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof, I have hereto set my hand and affixed my seal, at Columbus, County and State aforesaid, this tenth day of January, A.D. 1901.

RICHARD DOE. (*Seal.*)

In presence of
JOHN SMITH,
THOS. JONES.

STATE OF OHIO,
COUNTY OF FRANKLIN, } *ss.:*

Subscribed and acknowledged before me this tenth day of January, A.D. 1901.

JOHN RICE,
Notary Public.

Seal.

ASSIGNMENT OF AN UNDIVIDED INTEREST

Whereas, I, Richard Doe, of Philadelphia, County of Philadelphia, State of Pennsylvania, did obtain Letters Patent of the United States for improvements in Locomotive Head-Lights, which Letters Patent are numbered 000,000, and bear the date of June 26, 1900; and whereas John Roe, of Philadelphia, County of Philadelphia, and State of Pennsylvania, is desirous of acquiring an interest in the same:

Now, therefore, this indenture witnesseth, that for and in consideration of the sum of one thousand dollars to me in hand paid, the receipt of which I acknowledge, I do hereby sell, assign, and transfer unto the said John Roe, one undivided one-half of all the right, title, and interest in and to the said invention and in and to the Letters Patent therefor aforesaid; the same to be held and enjoyed by the said John Roe, his heirs, assigns, or legal representatives as fully and entirely as the same would have been held and enjoyed by me if this assignment and sale had not been made.

And I do hereby declare that I have not conveyed to any other party the rights and interests herein transferred to the said John Roe.

Witness my hand and seal this tenth day of January, A.D. 1901.

RICHARD DOE.

In presence of
JOHN SMITH,
THOS. JONES.

STATE OF PENNA.,
COUNTY OF PHILADELPHIA, } *ss.:*

Subscribed and sworn before me this tenth day of January, A.D. 1901.

Seal.

JOHN RICE,
Notary Public.

GRANT OF A TERRITORIAL INTEREST

Whereas, I, Richard Doe, of Dayton, County of Montgomery, State of Ohio, did obtain Letters Patent of the United States for improvements in Corn-Cultivators, which Letters Patent are numbered 000,000, and bear date the first day of January, 1901, and whereas, I am now the sole owner of said patent, and of all rights under the same in the below-recited territory; and whereas, John Roe, of Indianapolis, County of Marion, State of Indiana, is desirous of acquiring an interest in the same;

Now, therefore, to all whom it may concern, be it known, that for and in consideration of the sum of one thousand dollars to me in hand paid, the

receipt of which is hereby acknowledged, I, the said Richard Doe, have sold, assigned, transferred, and by these presents do sell, assign, and transfer unto the said John Roe, all the right, title, and interest in and to the said invention, as secured to me by said Letters Patent, for, to, and in the States of Indiana and Illinois, and for, to, or in no other place or places; the same to be held and enjoyed by the said John Roe, within and throughout the above-specified territory, but not elsewhere, for his own use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which said Letters Patent are or may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof, I have hereunto set my hand and affixed my seal this tenth day of January, A.D. 1901, in the presence of the subscribing witnesses.

RICHARD DOE.

In presence of
JOHN SMITH,
THOS. JONES.

STATE OF INDIANA, }
COUNTY OF MARION, } *ss.:*

On this tenth day of January, A.D. 1901, personally appeared before me Richard Doe, to me

known and known to me to be the individual who executed the foregoing instrument, and who acknowledged to me that he executed the same for the purpose therein expressed.

Seal.

JOHN RICE,
Notary Public.

LICENSE :—SHOP-RIGHT

In consideration of the sum of two hundred dollars to me paid by the John Roe Company, a corporation of Pennsylvania, located in the city of Pittsburg, I do hereby license and empower said company to manufacture at a single foundry and machine-shop in said Pittsburg, and in no other place or places, the improvements in Pipe-Wrenches, for which Letters Patent of the United States, No. 000,000, were granted to me January 1, 1901, and to sell the same throughout the United States to the full end of the term for which said Letters Patent are granted.

Signed and delivered at Pittsburg, in the County of Allegheny, and State of Pennsylvania, this tenth day of January, A.D. 1901.

RICHARD DOE.

TO JOHN ROE COMPANY,
Pittsburg, Pa.

LICENSE :—NON-EXCLUSIVE—WITH ROYALTY

This agreement, made this tenth day of January, 1901, between Richard Doe, of Wilmington, County of New Castle, State of Delaware, party of the first part, and the Metallic Railway Tie Company, of Chicago, in the County of Cook, and State of Illinois, party of the second part,

Witnesseth, that whereas Letters Patent of the United States, No. 000,000, for an improvement in Metallic Railroad-Ties, were granted to the party of the first part January 1, 1901; and whereas the party of the second part is desirous of manufacturing Metallic Railroad-Ties containing the said patented improvements:

Now, therefore, the parties hereto have agreed as follows:

I. The party of the first part hereby licenses and empowers the party of the second part to manufacture, subject to the conditions herein named, at their plant in Chicago, and in no other place or places, to the end of the term for which said Letters Patent were granted, Metallic Railroad-Ties containing the patented improvements, and to sell the same within the United States.

II. The party of the second part agrees to make full and true returns to the party of the first part, under oath, upon the first days of January and July in each year, of all Metallic Rail-

road-Ties containing said patented improvements manufactured by them.

III. The party of the second part agrees to pay the party of the first part five dollars as a license fee upon each and every thousand Metallic Railroad-Ties manufactured by the party of the second part containing the patented improvements: provided, that if the said fee be paid upon the days provided herein for semi-annual returns, or within ten days thereafter, a discount of fifty per cent. shall be made from said fee for prompt payment.

IV. The party of the second part agrees to put forth their best efforts and use due diligence in the manufacture and sale of the Metallic Railroad-Ties containing the said patented improvements, and if the royalties do not amount to five hundred dollars semi-annually, the party of the first part may terminate this license by serving a written notice upon the party of the second part.

V. Upon the failure of the party of the second part to make returns or to make payment of license fees, as herein provided, for thirty days after the days herein named, the party of the first part may terminate this license by serving a written notice upon the party of the second part; but the party of the second part shall not thereby be discharged from any liability to the party of the first part for any license

fees due at the time of the service of such notice.

In witness whereof, the parties above named have hereto set their hands the day and year first above written, at Chicago, County of Cook, and State of Illinois.

RICHARD DOE,
Metallic Railway Tie Company,
Per John Roe, President.

LICENSE :—EXCLUSIVE—WITH ROYALTY

This agreement, made this tenth day of January, 1901, between Richard Doe, of Boston, State of Massachusetts, party of the first part, and the Roe Vending Machine Company, a corporate body under the laws of the State of New Jersey, located and doing business at the city of New York, in the State of New York, party of the second part,

Witnesseth, that whereas, Letters Patent of the United States, No. 000,000, were, on the first day of January, 1901, granted to the said party of the first part, for improvements in Coin-Controlled Machines, and whereas said party of the second part is desirous of manufacturing and selling said patented article : Now, therefore, the parties hereto have agreed as follows :

I. The party of the first part gives to the party of the second part the exclusive right to manu-

facture and sell the said patented improvements, to the end of the term of said patent, subject to the conditions hereinafter named.

II. The party of the second part agrees to make full and true returns, on the first days of January and July in each year, of all machines manufactured and sold by them containing the said patented improvements in the six calendar months last past; and if the party of the first part shall not be satisfied in any respect with any such return, then shall the party of the first part have the right, either by himself or by his attorney, to examine any and all books of account of said party of the second part concerning any items, charges, memoranda, or information relating to the manufacture or sale of said patented Coin-Controlled Machines; and upon request made, said party of the second part shall produce all such books for said examination.

III. The party of the second part agrees to pay the party of the first part five dollars as a license fee upon every one of the said patented Coin-Controlled Machines manufactured by them, the whole of said license fee for each term of six months to be due and payable on the days hereinabove provided for semi-annual returns; provided, that if said fee be paid upon the days herein provided, or within fifteen days thereafter, a discount of fifty per cent. shall be made from said fee for prompt payment.

IV. The party of the second part agrees to pay the party of the first part at least two thousand dollars, less discount, as said license fee upon each of the semi-annual terms, even though they should not make enough of said patented machines to amount to that sum at the regular royalty of five dollars each.

V. The party of the second part shall cast, or otherwise permanently place, upon every such machine made under this license the word "Doe," and in close relation thereto the word "Patented," and the number and date of said patent.

VI. The party of the second part shall not, during the life of this license, make or sell any article which can compete in the market with said Coin-Controlled Machines.

VII. Upon the failure of the party of the second part to keep each and all of the conditions of this license and agreement, the party of the first part may, at his option, terminate this license, and such termination shall not release said party of the second part from any liability due at such time to the party of the first part.

In witness whereof, the above-named parties (the said Roe Vending Machine Company, by its president) have hereto set their hands the day and year first above written.

Richard Doe,

Roe Vending Machine Company,

By John Roe, President.

MAP OF THE UNITED STATES

CHAPTER X

TABLES AND STATISTICS

OFFICIAL CENSUS

OF THE

UNITED STATES, BY COUNTIES, FOR 1900

(*From the Bulletin of the Director of the Census*)

ALABAMA.—Area, 50,722 square miles.

Autauga	17,915	Dale	21,189	Marengo	38,315
Baldwin	13,194	Dallas	54,657		
Barbour	35,152	Dekalb	23,558	Marion	14,494
Bibb	18,498			Marshall	23,289
Blount	23,119	Elmore	26,099	Mobile	62,740
		Escambia	11,320	Monroe	23,666
Bullock	31,944	Etowah	27,361	Montgomery	72,047
Butler	25,761	Fayette	14,132		
Calhoun	34,874	Franklin	16,511	Morgan	28,820
Chambers	32,554			Perry	31,783
Cherokee	21,096	Geneva	19,096	Pickens	24,402
		Greene	24,182	Pike	29,172
Chilton	16,522	Hale	31,011	Randolph	21,647
Choctaw	18,136	Henry	36,147		
Clarke	27,790	Jackson	30,508	Russell	27,083
Clay	17,099			St. Clair	19,425
Cleburne	13,206	Jefferson	140,420	Shelby	23,684
		Lamar	16,084	Sumter	32,710
Coffee	20,972	Lauderdale	26,559	Talladega	35,773
Colbert	22,341	Lawrence	20,124		
Conecuh	17,514	Lee	31,826	Tallapoosa	29,675
Coosa	16,144			Tuscaloosa	36,147
Covington	15,346	Limestone	22,387	Walker	25,162
		Lowndes	35,651	Washington	11,134
Crenshaw	19,668	Macon	23,126	Wilcox	35,631
Cullman	17,849	Madison	43,702	Winston	9,554

TOTAL 1,828,697

ARIZONA.—Area, 113,916 square miles.

Apache	6,997	Maricopa	20,457	Santa Cruz	4,545
Cochise	9,251	Mohave	3,426	Yavapai	13,799
Coconino	5,514	Navajo	8,529	Yuma	4,145
Gila	4,973	Pima	14,689	San Carlos Indian Reserv'n	3,065
Graham	14,162	Pinal	7,779		
TOTAL					122,981

ARKANSAS.—Area, 52,198 square miles.

Arkansas	12,973	Garland	18,773	Newton	12,538
Ashley	19,734	Grant	7,671	Ouachita	20,892
Baxter	9,298	Greene	16,979	Perry	7,294
Benton	31,611	Hempstead	24,101	Phillips	26,561
Boone	16,396	Hot Spring	12,748	Pike	10,301
Bradley	9,651	Howard	14,076	Poinsett	7,025
Calhoun	8,539	Independence	22,557	Polk	18,362
Carroll	18,848	Izard	13,506	Pope	21,715
Chicot	14,528	Jackson	18,383	Prairie	11,875
Clark	21,289	Jefferson	40,972	Pulaski	63,179
Clay	15,886	Johnson	17,448	Randolph	17,156
Cleburne	9,028	Lafayette	10,594	St. Francis	17,157
Cleveland	11,620	Lawrence	16,491	Saline	13,122
Columbia	22,077	Lee	19,409	Scott	13,153
Conway	19,772	Lincoln	13,389	Searcy	11,988
Craighead	19,505	Little River	13,731	Sebastian	36,935
Crawford	21,270	Logan	20,563	Sevier	16,239
Crittenden	14,529	Lonoke	22,544	Sharp	12,199
Cross	11,051	Madison	19,864	Stone	8,100
Dallas	11,513	Marion	11,377	Union	22,495
Desha	11,511	Miller	17,558	Van Buren	11,220
Drew	19,451	Mississippi	16,884	Washington	34,956
Faulkner	20,780	Monroe	16,816	White	24,864
Franklin	17,395	Montgomery	9,444	Woodruff	16,304
Fulton	12,917	Nevada	16,609	Yell	22,750
TOTAL					1,311,564

CALIFORNIA.—Area, 188,981 square miles.

Alameda	130,197	Glenn	5,150	Mariposa	4,720
Alpine	509	Humboldt	27,104	Mendocino	20,465
Amador	11,116	Inyo	4,377	Merced	9,215
Butte	17,117	Kern	16,480	Modoc	5,076
Calaveras	11,200	Kings	9,871	Mono	2,167
Colusa	7,364	Lake	6,017	Monterey	19,380
Contra Costa	18,046	Lassen	4,511	Napa	16,451
Del Norte	2,408	Los Angeles	170,298	Nevada	17,789
Eldorado	8,986	Madera	6,864	Orange	19,696
Fresno	37,862	Marin	15,702	Placer	15,786

Plumas	4,657	Santa Barbara	18,934	Tehama	10,996
Riverside	17,897	Santa Clara	60,216	Trinity	4,383
Sacramento	45,915	Santa Cruz	21,512	Tulare	18,375
San Benito	6,633	Shasta	17,318	Tuolumne	11,166
San Bernardino	27,929	Sierra	4,017	Ventura	14,367
San Diego	35,090	Siskiyou	16,962	Yolo	13,618
San Francisco	342,782	Solano	24,143	Yuba	8,620
San Joaquin	35,452	Sonoma	38,480		
San Luis Obispo	16,637	Stanislaus	9,550		
San Mateo	12,094	Sutter	5,885		

TOTAL.....1,485,053

COLORADO.—Area, 104,500 square miles.

Arapahoe	153,017	Grand	741	Park	2,998
Archuleta	2,117	Gunnison	5,331	Phillips	1,583
Baca	759	Hinsdale	1,609	Pitkin	7,020
Bent	3,049	Huerfano	8,395	Prowers	3,766
Boulder	21,544	Jefferson	9,306	Pueblo	34,448
Chaffee	7,085	Kiowa	701	Rio Blanco	1,690
Cheyenne	501	Kit Carson	1,580	Rio Grande	4,080
Clear Creek	7,082	Lake	18,054	Routt	3,661
Conejos	8,794	La Plata	7,016	Saguache	3,853
Costilla	4,632	Larimer	12,168	San Juan	2,342
Custer	2,937	Las Animas	21,84[illegible]	San Miguel	5,379
Delta	5,487	Lincoln	926	Sedgwick	971
Dolores	1,134	Logan	3,292	Summit	2,744
Douglas	3,120	Mesa	9,267	Teller	29,002
Eagle	3,008	Mineral	1,913	Washington	1,241
Elbert	3,101	Montezuma	3,058	Weld	16,808
El Paso	31,602	Montrose	4,535	Yuma	1,729
Fremont	15,636	Morgan	3,268		
Garfield	5,835	Otero	11,522		
Gilpin	6,690	Ouray	4,731		

TOTAL.....539,700

CONNECTICUT.—Area, 4,674 square miles.

Fairfield	184,203	Middlesex	41,760	New London	82,758
Hartford	195,415			Tolland	24,523
Litchfield	63,672	New Haven	269,163	Windham	46,861

TOTAL.....908,355

DELAWARE.—Area, 2,120 square miles.

Kent	32,762	Newcastle	109,697	Sussex	42,276

TOTAL.....184,735

DISTRICT OF COLUMBIA.—Area, 60 square miles.

The District	278,718

FLORIDA.—Area, 59,268 square miles.

Alachua	32,245	Hernando	3,638	Nassau	9,654
Baker	4,516	Hillsboro	36,013	Orange	11,374
Bradford	10,295	Holmes	7,762	Osceola	3,444
Brevard	5,158	Jackson	23,377	Pasco	6,054
Calhoun	5,132	Jefferson	16,195	Polk	12,472
Citrus	5,391	Lafayette	4,987	Putnam	11,641
Clay	5,635	Lake	7,467	St. John	9,165
Columbia	17,094	Lee	3,071	Santa Rosa	10,293
Dade	4,955	Leon	19,887	Sumter	6,187
De Soto	8,047	Levy	8,603	Suwanee	14,554
Duval	39,733	Liberty	2,956	Taylor	3,999
Escambia	28,313	Madison	15,446	Volusia	10,003
Franklin	4,890	Manatee	4,663	Wakulla	5,149
Gadsden	15,294	Marion	24,403	Walton	9,346
Hamilton	11,881	Monroe	18,006	Washington	10,154
Total					528,542

GEORGIA.—Area, 58,000 square miles.

Appling	12,336	Clinch	8,732	Fulton	117,363
Baker	6,704	Cobb	24,664	Gilmer	10,198
Baldwin	17,768	Coffee	16,169	Glascock	4,516
Banks	10,545	Colquitt	13,636	Glynn	14,317
Bartow	20,823	Columbia	10,653	Gordon	14,119
Berrien	19,440	Coweta	24,980	Greene	16,542
Bibb	50,473	Crawford	10,368	Gwinnett	25,585
Brooks	18,606	Dade	4,578	Habersham	13,604
Bryan	6,122	Dawson	5,442	Hall	20,752
Bulloch	21,377	Decatur	29,454	Hancock	18,277
Burke	30,165	Dekalb	21,112	Haralson	11,922
Butts	12,805	Dodge	13,975	Harris	18,009
Calhoun	9,274	Dooly	26,567	Hart	14,492
Camden	7,669	Dougherty	13,679	Heard	11,177
Campbell	9,518	Douglas	8,745	Henry	18,602
Carroll	26,576	Early	14,828	Houston	22,641
Catoosa	5,823	Echols	3,209	Irwin	13,645
Charlton	3,592	Effingham	8,334	Jackson	24,039
Chatham	71,239	Elbert	19,729	Jasper	15,033
Chattahoochee	5,790	Emanuel	21,279	Jefferson	18,212
Chattooga	12,952	Fannin	11,214	Johnson	11,409
Cherokee	15,243	Fayette	10,114	Jones	13,358
Clarke	17,708	Floyd	33,113	Laurens	25,908
Clay	8,568	Forsyth	11,550	Lee	10,344
Clayton	9,598	Franklin	17,700	Liberty	13,093

Lincoln	7,156	Pickens	8,641	Terrell	19,023
Lowndes	20,036	Pierce	8,100	Thomas	31,076
Lumpkin	7,433	Pike	18,761	Towns	4,748
McDuffie	9,804	Polk	17,856		
McIntosh	6,537			Troup	24,002
		Pulaski	18,489	Twiggs	8,716
Macon	14,093	Putnam	13,436	Union	8,481
Madison	13,224	Quitman	4,701	Upson	13,670
Marion	10,080	Rabun	6,285	Walker	15,661
Meriwether	23,339	Randolph	16,847		
Miller	6,319			Walton	20,942
		Richmond	53,735	Ware	13,761
Milton	6,763	Rockdale	7,515	Warren	11,463
Mitchell	14,767	Schley	5,499	Washington	28,227
Monroe	20,682	Screven	19,252	Wayne	9,449
Montgomery	16,359	Spalding	17,619		
Morgan	15,813			Webster	6,618
		Stewart	15,856	White	5,912
Murray	8,623	Sumter	26,212	Whitfield	14,509
Muscogee	29,836	Talbot	12,197	Wilcox	11,097
Newton	16,734	Taliaferro	7,912	Wilkes	20,866
Oconee	8,602	Tattnall	20,419		
Oglethorpe	17,881			Wilkinson	11,440
		Taylor	9,846	Worth	18,664
Paulding	12,969	Telfair	10,083		

TOTAL.....2,216,331

IDAHO.—Area, 86,294 square miles.

Ada	11,559	Cassia	3,951	Lemhi	3,446
Bannock	11,702	Custer	2,049	Lincoln	1,784
Bear Lake	7,051	Elmore	2,286	Nez Perces	13,748
Bingham	10,447			Oneida	8,933
Blaine	4,900	Fremont	12,821	Owyhee	3,804
		Idaho	9,121		
Boise	4,174	Kootenai	10,216	Shoshone	11,950
Canyon	7,497	Latah	13,451	Washington	6,882

TOTAL.....161,772

ILLINOIS.—Area, 55,405 square miles.

Adams	67,058	Cook	1,838,735	Greene	23,402
Alexander	19,384	Crawford	19,240	Grundy	24,136
Bond	16,078	Cumberland	16,124	Hamilton	20,197
Boone	15,791	Dekalb	31,756	Hancock	32,215
Brown	11,557	Dewitt	18,972	Hardin	7,448
Bureau	41,112	Douglas	19,097	Henderson	10,836
Calhoun	8,917	Dupage	28,196	Henry	40,049
Carroll	18,963	Edgar	28,273	Iroquois	38,014
Cass	17,222	Edwards	10,345	Jackson	33,871
Champaign	47,622	Effingham	20,465	Jasper	20,160
Christian	32,790	Fayette	28,065	Jefferson	28,133
Clark	24,033	Ford	18,359	Jersey	14,612
Clay	19,553	Franklin	19,675	Jo Daviess	24,533
Clinton	19,824	Fulton	46,201	Johnson	15,667
Coles	34,146	Gallatin	15,836	Kane	78,792

Kankakee	37,154	Mercer	20,945	Scott	10,455
Kendall	11,467	Monroe	13,847	Shelby	32,126
Knox	43,612	Montgomery	30,836	Stark	10,186
Lake	34,504	Morgan	35,006	Stephenson	34,933
Lasalle	87,776	Moultrie	15,224	Tazewell	33,221
Lawrence	16,523	Ogle	29,129	Union	22,610
Lee	29,894	Peoria	88,608	Vermilion	65,635
Livingston	42,035	Perry	19,830	Wabash	12,583
Logan	28,680	Piatt	17,706	Warren	23,163
McDonough	28,412	Pike	31,595	Washington	19,526
McHenry	29,759	Pope	13,585	Wayne	27,626
McLean	67,843	Pulaski	14,554	White	25,386
Macon	44,003	Putnam	4,746	Whiteside	34,710
Macoupin	42,256	Randolph	28,001	Will	74,764
Madison	64,694	Richland	16,391	Williamson	27,796
Marion	30,446	Rock Island	55,249	Winnebago	47,845
Marshall	16,370	St. Clair	86,685	Woodford	21,822
Mason	17,491	Saline	21,685		
Massac	13,110	Sangamon	71,593		
Menard	14,336	Schuyler	16,129		

TOTAL 4,821,550

INDIANA.—Area, 33,809 square miles.

Adams	22,232	Gibson	30,099	Martin	14,711
Allen	77,270	Grant	54,693	Miami	28,344
Bartholomew	24,594	Greene	28,530	Monroe	20,873
Benton	13,123	Hamilton	29,914	Montgomery	29,388
Blackford	17,213	Hancock	19,189	Morgan	20,457
Boone	26,321	Harrison	21,702	Newton	10,448
Brown	9,727	Hendricks	21,292	Noble	23,533
Carroll	19,953	Henry	25,088	Ohio	4,724
Cass	34,545	Howard	28,575	Orange	16,854
Clark	31,835	Huntington	28,901	Owen	15,149
Clay	34,235	Jackson	26,633	Parke	23,000
Clinton	28,202	Jasper	14,292	Perry	18,778
Crawford	13,476	Jay	26,818	Pike	20,486
Daviess	29,914	Jefferson	22,913	Porter	19,175
Dearborn	22,194	Jennings	15,757	Posey	22,333
Decatur	19,518	Johnson	20,223	Pulaski	14,033
Dekalb	25,711	Knox	32,746	Putnam	21,478
Delaware	49,624	Kosciusko	29,109	Randolph	28,653
Dubois	20,357	Lagrange	15,234	Ripley	19,881
Elkhart	45,052	Lake	37,892	Rush	20,148
Fayette	13,495	Laporte	38,386	St. Joseph	58,881
Floyd	30,118	Lawrence	25,729	Scott	8,307
Fountain	21,446	Madison	70,470	Shelby	26,491
Franklin	16,388	Marion	197,227	Spencer	22,407
Fulton	17,453	Marshall	25,119	Starke	10,431

Steuben	15,219	Vanderburg	71,769	Washington	19,409
Sullivan	26,005	Vermilion	15,252	Wayne	38,970
Switzerland	11,840	Vigo	62,035	Wells	23,449
Tippecanoe	38,659	Wabash	28,235	White	19,138
Tipton	19,116	Warren	11,371	Whitley	17,328
Union	6,748	Warrick	22,329		

TOTAL.....2,516,492

IOWA.—Area, 50,914 square miles.

Adair	16,192	Floyd	17,754	Monona	17,980
Adams	13,601	Franklin	14,996	Monroe	17,985
Allamakee	18,711			Montgomery	17,803
Appanoose	25,927	Fremont	18,546	Muscatine	28,242
Audubon	13,626	Greene	17,820	O'Brien	16,985
		Grundy	13,757		
Benton	25,177	Guthrie	18,729	Osceola	8,725
Blackhawk	32,399	Hamilton	19,514	Page	24,187
Boone	28,200			Palo Alto	14,354
Bremer	16,305	Hancock	13,752	Plymouth	22,209
Buchanan	21,427	Hardin	22,794	Pocahontas	15,339
		Harrison	25,597		
Buena Vista	16,975	Henry	20,022	Polk	82,624
Butler	17,955	Howard	14,512	Pottawattamie	54,336
Calhoun	18,569			Poweshiek	19,414
Carroll	20,319	Humboldt	12,667	Ringgold	15,325
Cass	21,274	Ida	12,327	Sac	17,639
		Iowa	19,544		
Cedar	19,371	Jackson	23,615	Scott	51,558
Cerro Gordo	20,672	Jasper	26,976	Shelby	17,932
Cherokee	16,570			Sioux	23,337
Chickasaw	17,037	Jefferson	17,437	Story	23,159
Clarke	12,440	Johnson	24,817	Tama	24,585
		Jones	21,954		
Clay	13,401	Keokuk	24,979	Taylor	18,784
Clayton	27,750	Kossuth	22,720	Union	19,928
Clinton	43,832			Van Buren	17,354
Crawford	21,685	Lee	39,719	Wapello	35,426
Dallas	23,058	Linn	55,392	Warren	20,376
		Louisa	13,516		
Davis	15,620	Lucas	16,126	Washington	20,718
Decatur	18,115	Lyon	13,165	Wayne	17,491
Delaware	19,185			Webster	31,757
Des Moines	35,939	Madison	17,710	Winnebago	12,725
Dickinson	7,995	Mahaska	34,273	Winneshiek	23,731
		Marion	24,159		
Dubuque	56,403	Marshall	29,991	Woodbury	54,610
Emmet	9,936	Mills	16,764	Worth	10,887
Fayette	29,845	Mitchell	14,916	Wright	18,227

TOTAL.....2,231,853

KANSAS.—Area, 78,418 square miles.

Allen	19,507	Barton	13,784	Chase	8,246
Anderson	13,938	Bourbon	24,712	Chautauqua	11,804
Atchison	28,606	Brown	22,369	Cherokee	42,694
Barber	6,594	Butler	23,363	Cheyenne	2,640

Clark	1,701	Jefferson	17,533	Pottawatomie	18,470
Clay	15,833	Jewell	19,420	Pratt	7,085
Cloud	18,071	Johnson	18,104	Rawlins	5,241
Coffey	16,643	Kearny	1,107		
Comanche	1,619			Reno	29,027
		Kingman	10,663	Republic	18,248
Cowley	30,156	Kiowa	2,365	Rice	14,745
Crawford	38,809	Labette	27,387	Riley	13,828
Decatur	9,234	Lane	1,563	Rooks	7,960
Dickinson	21,816	Leavenworth	40,940		
Doniphan	15,079			Rush	6,134
		Lincoln	9,886	Russell	8,489
Douglas	25,096	Linn	16,689	Saline	17,076
Edwards	3,682	Logan	1,962	Scott	1,098
Elk	11,443	Lyon	25,074	Sedgwick	44,037
Ellis	8,626	McPherson	21,421		
Ellsworth	9,626			Seward	822
		Marion	20,676	Shawnee	53,727
Finney	3,469	Marshall	24,355	Sheridan	3,819
Ford	5,497	Meade	1,581	Sherman	3,341
Franklin	21,354	Miami	21,641	Smith	16,384
Geary	10,744	Mitchell	14,647		
Gove	2,441			Stafford	9,829
		Montgomery	29,039	Stanton	327
Graham	5,173	Morris	11,967	Stevens	620
Grant	422	Morton	304	Sumner	25,631
Gray	1,264	Nemaha	20,376	Thomas	4,112
Greeley	493	Neosho	19,254		
Greenwood	16,196			Trego	2,722
		Ness	4,535	Wabaunsee	12,813
Hamilton	1,426	Norton	11,325	Wallace	1,178
Harper	10,310	Osage	23,659	Washington	21,963
Harvey	17,591	Osborne	11,844	Wichita	1,197
Haskell	457	Ottawa	11,182		
Hodgeman	2,032			Wilson	15,621
		Pawnee	5,084	Woodson	10,022
Jackson	17,171	Phillips	14,442	Wyandotte	73,227

TOTAL 1,470,495

KENTUCKY.—Area, 37,680 square miles.

Adair	14,888	Butler	15,896	Edmonson	10,080
Allen	14,657	Caldwell	14,510	Elliott	10,387
Anderson	10,051	Calloway	17,633	Estill	11,669
Ballard	10,761	Campbell	54,223	Fayette	42,071
Barren	23,197	Carlisle	10,195	Fleming	17,074
Bath	14,734	Carroll	9,825	Floyd	15,552
Bell	15,701	Carter	20,228	Franklin	20,852
Boone	11,170	Casey	15,144	Fulton	11,546
Bourbon	18,069	Christian	37,962	Gallatin	5,163
Boyd	18,834	Clark	16,694	Garrard	12,042
Boyle	13,817	Clay	15,364	Grant	13,239
Bracken	12,137	Clinton	7,871	Graves	33,204
Breathitt	14,322	Crittenden	15,191	Grayson	19,878
Breckinridge	20,534	Cumberland	8,962	Green	12,255
Bullitt	9,602	Daviess	38,667	Greenup	15,432

Hancock	8,914	Logan	25,994	Perry	8,276
Hardin	22,937	Lyon	9,319	Pike	22,686
Harlan	9,838	McCracken	28,733	Powell	6,443
Harrison	18,570	McLean	12,448	Pulaski	31,293
Hart	18,390	Madison	25,607	Robertson	4,900
Henderson	32,907	Magoffin	12,006	Rockcastle	12,416
Henry	14,620	Marion	16,290	Rowan	8,277
Hickman	11,745	Marshall	13,692	Russell	9,695
Hopkins	30,995	Martin	5,780	Scott	18,076
Jackson	10,561	Mason	20,446	Shelby	18,340
Jefferson	232,549	Meade	10,533	Simpson	11,624
Jessamine	11,925	Menifee	6,818	Spencer	7,406
Johnson	13,730	Mercer	14,426	Taylor	11,075
Kenton	63,591	Metcalf	9,978	Todd	17,371
Knott	8,704	Monroe	13,053	Trigg	14,073
Knox	17,372	Montgomery	12,034	Trimble	7,272
Larue	10,764	Morgan	12,792	Union	21,326
Laurel	17,592	Muhlenberg	20,741	Warren	29,970
Lawrence	19,612	Nelson	16,587	Washington	14,182
Lee	7,988	Nicholas	11,952	Wayne	14,892
Leslie	6,753	Ohio	27,287	Webster	20,097
Letcher	9,172	Oldham	7,078	Whitley	25,015
Lewis	17,868	Owen	17,553	Wolfe	8,764
Lincoln	17,059	Owsley	6,874	Woodford	13,134
Livingston	11,354	Pendleton	14,947		

TOTAL 2,147,174

LOUISIANA.—Area, 41,255 square miles.

Acadia	23,483	Iberville	27,006	St. Helena	8,479
Ascension	24,142	Jackson	9,119	St. James	20,197
Assumption	21,620	Jefferson	15,321	St. John the Baptist	12,330
Avoyelles	29,701	Lafayette	22,825	St. Landry	52,906
Bienville	17,588	Lafourche	28,882	St. Martin	18,940
Bossier	24,153	Lincoln	15,898	St. Mary	34,145
Caddo	44,499	Livingston	8,100	St. Tammany	13,335
Calcasieu	30,428	Madison	12,322	Tangipahoa	17,625
Caldwell	6,917	Morehouse	16,634	Tensas	19,070
Cameron	3,952	Natchitoches	33,216	Terrebonne	24,464
Catahoula	16,351	Orleans	287,104	Union	18,520
Claiborne	23,029	Ouachita	20,947	Vermilion	20,705
Concordia	13,559	Plaquemines	13,039	Vernon	10,327
De Soto	25,063	Pointe Coupee	25,777	Washington	9,628
East Baton Rouge	31,153	Rapides	39,578	Webster	15,125
East Carroll	11,373	Red River	11,548	West Baton Rouge	10,285
East Feliciana	20,443	Richland	11,116	West Carroll	3,685
Franklin	8,890	Sabine	15,421	West Feliciana	15,994
Grant	12,902	St. Bernard	5,031	Winn	9,648
Iberia	29,015	St. Charles	9,072		

TOTAL 1,381,625

MAINE.—Area, 31,766 square miles.

Androscoggin	54,242	Knox	30,406	Somerset	33,849
Aroostook	60,744	Lincoln	19,669	Waldo	24,185
Cumberland	100,689	Oxford	32,238	Washington	45,232
Franklin	18,444	Penobscot	76,246		
Hancock	37,241			York	64,885
		Piscataquis	16,949		
Kennebec	59,117	Sagadahoc	20,380		

TOTAL....694,466

MARYLAND.—Area, 11,124 square miles.

Allegany	53,694	Dorchester	27,962	Queen Anne	18,364
Anne Arundel	40,018			St. Mary	13,136
Baltimore	90,755	Frederick	51,920	Somerset	25,923
Baltimore City	508,957	Garrett	17,701		
Calvert	10,223	Harford	28,269	Talbot	20,342
		Howard	16,715	Washington	45,133
Caroline	16,248	Kent	18,786	Wicomico	22,852
Carroll	33,860			Worcester	20,865
Cecil	24,662	Montgomery	30,451		
Charles	18,316	Prince George	29,898		

TOTAL....1,190,050

MASSACHUSETTS.—Area, 7,800 square miles.

Barnstable	27,826	Franklin	41,209	Norfolk	151,539
Berkshire	95,667	Hampden	175,603	Plymouth	113,985
Bristol	252,029	Hampshire	58,820	Suffolk	611,417
Dukes	4,561	Middlesex	565,696	Worcester	346,958
Essex	357,030	Nantucket	3,006		

TOTAL....2,805,346

MICHIGAN.—Area, 56,243 square miles.

Alcona	5,691	Cheboygan	15,516	Houghton	66,063
Alger	5,868	Chippewa	21,338	Huron	34,162
Allegan	38,812	Clare	8,360	Ingham	39,818
Alpena	18,254	Clinton	25,136	Ionia	34,329
Antrim	16,568	Crawford	2,943	Iosco	10,246
Arenac	9,821	Delta	23,881	Iron	8,990
Baraga	4,320	Dickinson	17,890	Isabella	22,784
Barry	22,514	Eaton	31,668	Jackson	48,222
Bay	62,378	Emmet	15,931	Kalamazoo	44,310
Benzie	9,685	Genesee	41,804		
				Kalkaska	7,133
Berrien	49,165	Gladwin	6,564	Kent	129,714
Branch	27,811	Gogebic	16,738	Keweenaw	3,217
Calhoun	49,315	Grand Traverse	20,479	Lake	4,957
Cass	20,876	Gratiot	29,889	Lapeer	27,641
Charlevoix	13,956	Hillsdale	29,865	Leelanaw	10,556

Lenawee	48,406	Montcalm	32,754	Roscommon	1,787
Livingston	19,664			Saginaw	81,222
Luce	2,983	Montmorency	3,234	St. Clair	55,228
Mackinac	7,703	Muskegon	37,036		
Macomb	33,244	Newaygo	17,673	St. Joseph	23,889
		Oakland	44,792	Sanilac	35,055
Manistee	27,856	Oceana	16,644	Schoolcraft	7,889
Manitou				Shiawassee	33,866
	41,239	Ogemaw	7,765	Tuscola	35,890
Mason	18,885	Ontonagon	6,197		
Mecosta	20,693	Osceola	17,859	Van Buren	33,274
		Oscoda	1,468	Washtenaw	47,761
Menominee	27,046	Otsego	6,175	Wayne	348,793
Midland	14,439			Wexford	16,845
Missaukee	9,308	Ottawa	39,667		
Monroe	32,754	Presque Isle	8,821		

TOTAL 2,420,982

MINNESOTA.—Area, 95,274 square miles.

Aitkin	6,743	Isanti	11,675	Ramsey	170,554
Anoka	11,313	Itasca	4,573	Red Lake	12,195
Becker	14,375			Redwood	17,261
Beltrami	11,030	Jackson	14,793	Renville	23,693
Benton	9,912	Kanabec	4,614		
		Kandiyohi	18,416	Rice	26,080
Bigstone	8,731	Kittson	7,889	Rock	9,668
Blue Earth	32,263	Lac qui Parle	14,289	Roseau	6,994
Brown	19,787			St. Louis	82,932
Carlton	10,017	Lake	4,654	Scott	15,147
Carver	17,544	Lesueur	20,234		
		Lincoln	8,966	Sherburne	7,281
Cass	7,777	Lyon	14,591	Sibley	16,862
Chippewa	12,499	McLeod	19,595	Stearns	44,464
Chisago	13,248			Steele	16,524
Clay	17,942	Marshall	15,698	Stevens	8,721
Cook	810	Martin	16,936		
		Meeker	17,753	Swift	13,503
Cottonwood	12,069	Millelacs	8,066	Todd	22,214
Crow Wing	14,250	Morrison	22,891	Traverse	7,573
Dakota	21,733			Wabasha	18,924
Dodge	13,340	Mower	22,335	Wadena	7,921
Douglas	17,964	Murray	11,911		
		Nicollet	14,774	Waseca	14,760
Faribault	22,055	Nobles	14,932	Washington	27,808
Fillmore	23,238	Norman	15,045	Watonwan	11,496
Freeborn	21,838			Wilkin	8,080
Goodhue	31,137	Olmsted	23,119		
Grant	8,935	Ottertai	45,375	Winona	35,686
		Pine	11,546	Wright	29,157
Hennepin	228,340	Pipestone	9,264	White Earth Indian Reservation	3,486
Houston	15,400	Polk	35,429		
Hubbard	6,578			Yellow Medicine	14,602
		Pope	12,577		

TOTAL 1,751,394

MISSISSIPPI.—Area, 47,156 square miles.

Adams	30,111	Itawamba	13,544	Perry	14,682
Alcorn	14,987	Jackson	16,513	Pike	27,545
Amite	20,708	Jasper	15,394	Pantotoc	18,274
Attala	26,248	Jefferson	21,292	Prentiss	15,788
Benton	10,510	Jones	17,846	Quitman	5,435
Bolivar	35,427	Kemper	20,492	Rankin	20,955
Calhoun	16,512	Lafayette	22,110	Scott	14,316
Carroll	22,116	Lauderdale	38,150	Sharkey	12,178
Chickasaw	19,892	Lawrence	15,103	Simpson	12,800
Choctaw	13,036	Leake	17,360	Smith	13,055
Claiborne	20,787	Lee	21,956	Sunflower	16,084
Clarke	17,741	Leflore	23,834	Tallahatchie	19,600
Clay	19,563	Lincoln	21,552	Tate	20,618
Coahoma	26,293	Lowndes	29,095	Tippah	12,983
Copiah	34,395	Madison	32,493	Tishomingo	10,124
Covington	13,076	Marion	13,501	Tunica	16,479
De Soto	24,751	Marshall	27,674	Union	16,522
Franklin	13,678	Monroe	31,216	Warren	40,912
Greene	6,795	Montgomery	16,536	Washington	49,216
Grenada	14,112	Neshoba	12,726	Wayne	12,539
Hancock	11,886	Newton	19,708	Webster	13,619
Harrison	21,002	Noxubee	30,846	Wilkinson	21,453
Hinds	52,577	Oktibbeha	20,183	Winston	14,124
Holmes	36,828	Panola	29,027	Yalobusha	19,742
Issaquena	10,400	Pearl River	6,697	Yazoo	43,948
TOTAL					1,551,270

MISSOURI.—Area, 67,380 square miles.

Adair	21,728	Chariton	26,826	Harrison	24,398
Andrew	17,382	Christian	16,989	Henry	28,054
Atchison	16,501	Clark	15,383	Hickory	9,985
Audrain	21,160	Clay	18,903	Holt	17,063
Barry	25,532	Clinton	17,363	Howard	18,337
Barton	18,253	Cole	20,578	Howell	21,834
Bates	30,141	Cooper	22,532	Iron	8,716
Benton	16,556	Crawford	12,959	Jackson	195,193
Bollinger	14,650	Dade	18,125	Jasper	84,018
Boone	28,642	Dallas	13,903	Jefferson	25,712
Buchanan	121,838	Daviess	21,325	Johnson	27,843
Butler	16,769	Dekalb	14,418	Knox	13,479
Caldwell	16,656	Dent	12,986	Laclede	16,523
Callaway	25,984	Douglas	16,802	Lafayette	31,679
Camden	13,113	Dunklin	21,706	Lawrence	31,662
Cape Girardeau	24,315	Franklin	30,581	Lewis	16,724
Carroll	26,455	Gasconade	12,298	Lincoln	18,352
Carter	6,706	Gentry	20,554	Linn	25,503
Cass	23,636	Greene	52,713	Livingston	22,302
Cedar	16,923	Grundy	17,832	McDonald	13,574

Macon	33,018	Pettis	32,438	Saline	33,703
Madison	9,975			Schuyler	10,840
Maries	9,616	Phelps	14,194	Scotland	13,232
Marion	26,331	Pike	25,744		
Mercer	14,706	Platte	16,193	Scott	13,092
		Polk	23,255	Shannon	11,247
Miller	15,187	Pulaski	10,394	Shelby	16,167
Mississippi	11,837			Stoddard	24,669
Moniteau	15,931	Putnam	16,688	Stone	9,892
Monroe	19,716	Ralls	12,287		
Montgomery	16,571	Randolph	24,442	Sullivan	20,282
		Ray	24,805	Taney	10,127
Morgan	12,175	Reynolds	8,161	Texas	22,192
New Madrid	11,280			Vernon	31,619
Newton	27,001	Ripley	13,186	Warren	9,919
Nodaway	32,938	St. Charles	24,474		
Oregon	13,906	St. Clair	17,907	Washington	14,263
		Ste. Genevieve	10,359	Wayne	15,309
Osage	14,096	St. Francois	24,051	Webster	16,640
Ozark	12,145			Worth	9,832
Pemiscot	12,115	St. Louis	50,040	Wright	17,519
Perry	15,134	St. Louis City	575,238		

TOTAL 3,106,665

MONTANA.—Area, 143,776 square miles.

Beaverhead	5,615	Flathead	9,375	Park	7,341
Broadwater	2,641			Ravalli	7,822
Carbon	7,533	Gallatin	9,553	Silverbow	47,635
Cascade	25,777	Granite	4,328		
Choteau	10,966	Jefferson	5,330	Sweet Grass	3,086
		Lewis and Clarke	19,171	Teton	5,080
Custer	7,891	Madison	7,695	Valley	4,355
Dawson	2,443			Yellowstone	6,212
Deerlodge	17,393	Meagher	2,526	Crow Indian Reservation	2,660
Fergus	6,937	Missoula	13,964		

TOTAL 243,339

NEBRASKA.—Area, 75,995 square miles.

Adams	18,840	Clay	15,735	Gage	30,051
Antelope	11,344	Colfax	11,211	Garfield	2,127
Banner	1,114	Cuming	14,584		
Blaine	603			Gosper	5,301
		Custer	19,758	Grant	763
Boone	11,689	Dakota	6,286	Greeley	5,691
Boxbutte	5,572	Dawes	6,215	Hall	17,206
Boyd	7,332	Dawson	12,214	Hamilton	13,330
Brown	3,470	Deuel	2,630		
Buffalo	20,254			Harlan	9,370
		Dixon	10,535	Hayes	2,708
Burt	13,040	Dodge	22,298	Hitchcock	4,409
Butler	15,703	Douglas	140,590	Holt	12,224
Cass	21,330	Dundy	2,434	Hooker	432
Cedar	12,467	Fillmore	15,087		
Chase	2,559			Howard	10,343
		Franklin	9,455	Jefferson	15,196
Cherry	6,541	Frontier	8,781	Johnson	11,197
Cheyenne	5,570	Furnas	12,373	Kearney	9,866

Keith	1,951	Otoe	22,288	Seward	15,690
		Pawnee	11,770	Sheridan	6,033
Keyapaha	3,076			Sherman	6,550
Kimball	758	Perkins	1,702		
Knox	14,343	Phelps	10,772	Sioux	2,055
Lancaster	64,835	Pierce	8,445	Stanton	6,959
Lincoln	11,416	Platte	17,747	Thayer	14,325
		Polk	10,542	Thomas	628
Logan	960			Thurston	8,756
Loup	1,305	Redwillow	9,604		
McPherson	517	Richardson	19,614	Valley	7,339
Madison	16,976	Rock	2,809	Washington	13,086
Merrick	9,255	Saline	18,252	Wayne	9,862
		Sarpy	9,080	Webster	11,619
Nance	8,222			Wheeler	1,362
Nemaha	14,952	Saunders	22,085	York	18,205
Nuckolls	12,414	Scotts Bluff	2,552		

TOTAL 1,068,539

NEVADA.—Area, 122,090 square miles.

Churchill	830	Humboldt	4,463	Ormsby	2,893
Douglas	1,534	Lander	1,534	Storey	3,673
Elko	5,688	Lincoln	3,284	Washoe	9,141
Esmeralda	1,972	Lyon	2,268	White Pine	1,961
Eureka	1,954	Nye	1,140		

TOTAL 42,335

NEW HAMPSHIRE.—Area, 9,280 square miles.

Belknap	19,526	Grafton	40,844	Strafford	39,337
Carroll	16,895	Hillsboro	112,640	Sullivan	18,009
Cheshire	31,321	Merrimack	52,430		
Coos	29,468	Rockingham	51,118		

TOTAL 411,588

NEW JERSEY.—Area, 8,320 square miles.

Atlantic	46,402	Gloucester	31,905	Ocean	19,747
Bergen	78,441	Hudson	386,048		
Burlington	58,241	Hunterdon	34,507	Passaic	155,202
Camden	107,643			Salem	25,530
Cape May	13,201	Mercer	95,365	Somerset	32,948
		Middlesex	79,762	Sussex	24,134
Cumberland	51,193	Monmouth	82,057	Union	99,353
Essex	359,053	Morris	65,156	Warren	37,781

TOTAL 1,883,669

NEW MEXICO.—Area, 121,201 square miles.

Bernalillo	28,630	Lincoln	4,953	Santa Fé	14,658
Chaves	4,773	Mora	10,304	Sierra	3,158
Colfax	10,150	Otero	4,791		
Donna Ana	10,187			Socorro	12,195
Eddy	3,229	Rio Arriba	13,777	Taos	10,889
		San Juan	4,828	Union	4,528
Grant	12,883	San Miguel	22,053	Valencia	13,895
Guadalupe	5,429				

TOTAL 195,310

NEW YORK.—Area, 47,800 square miles.

Albany.....165,571	Herkimer..... 51,049	Rensselaer.....121,697
Allegany..... 41,501	Jefferson..... 76,748	Richmond..... 67,021
Broome..... 69,149	Kings.....1,166,582	Rockland..... 38,298
Cattaraugus.. . 65,643	Lewis..... 27,427	St. Lawrence... 89,083
Cayuga..... 66,234	Livingston.. . 37,059	Saratoga..... 61,089
Chautauqua.... 88,314	Madison..... 40,545	Schenectady.... 46,852
Chemung..... 54,063	Monroe 217,854	Schoharie..... 26,854
Chenango..... 36,568	Montgomery.. 47,488	Schuyler..... 15,811
Clinton..... 47,430	Nassau..... 55,448	Seneca..... 28,114
Columbia..... 43,211	New York....2,050,600	Steuben..... 82,822
Cortland..... 27,576	Niagara..... 74,961	Suffolk..... 77,582
Delaware..... 46,413	Oneida..... 132,800	Sullivan..... 32,306
Dutchess..... 81,670	Onondaga.... 168,735	Tioga..... 27,951
Erie.....433,686	Ontario..... 49,605	Tompkins..... 33,330
Essex..... 30,707	Orange..... 103,859	Ulster..... 88,422
Franklin..... 42,853	Orleans 30,164	Warren..... 29,943
Fulton..... 42,842	Oswego..... 70,881	Washington ... 45,624
Genesee..... 34,561	Otsego..... 48,939	Wayne 48,660
Greene..... 31,478	Putnam..... 13,787	Westchester....183,375
Hamilton 4,947	Queens.. 152,999	Wyoming..... 30,413
		Yates..... 20,318

TOTAL.....7,268,012

NORTH CAROLINA.—Area, 50,704 square miles.

Alamance..... 25,665	Craven..... 24,160	Hyde 9,278
Alexander..... 10,960	Cumberland... 29,249	Iredell..... 29,064
Alleghany..... 7,759		Jackson..... 11,853
Anson..... 21,870	Currituck..... 6,529	Johnston..... 32,250
Ashe..... 19,581	Dare..... 4,757	Jones..... 8,226
	Davidson..... 23,403	
Beaufort..... 26,404	Davie..... 12,115	Lenoir..... 18,639
Bertie..... 20,538	Dulpin 22,405	Lincoln..... 15,498
Bladen..... 17,677		McDowell 12,567
Brunswick..... 12,657	Durham..... 26,233	Macon 12,104
Buncombe..... 44,288	Edgecombe 26,591	Madison 20,644
	Forsyth..... 35,261	
Burke..... 17,699	Franklin..... 25,116	Martin..... 15,383
Cabarrus..... 22,456	Gaston..... 27,903	Mecklenburg... 55,268
Caldwell 15,694		Mitchell 15,221
Camden..... 5,474	Gates..... 10,413	Montgomery.... 14,197
Carteret..... 11,811	Graham 4,343	Moore..... 23,622
	Granville..... 23,263	
Caswell 15,028	Greene..... 12,038	Nash 25,478
Catawba..... 22,133	Guilford..... 39,074	New Hanover.. 25,785
Chatham..... 23,912		Northampton .. 21,150
Cherokee..... 11,860	Halifax..... 30,793	Onslow..... 11,940
Chowan..... 10,258	Harnett..... 15,988	Orange..... 14,690
	Haywood..... 16,222	
Clay..... 4,532	Henderson..... 14,104	Pamlico..... 8,045
Cleveland..... 25,078	Hertford... ... 14,294	Pasquotank.... 18,660
Columbus 21,274		Pender..... 13,381

Perquimans	10,091	Rutherford	25,101	Vance	16,684
Person	16,685	Sampson	26,380	Wake	54,626
		Stanly	15,220	Warren	19,151
Pitt	30,889			Washington	10,608
Polk	7,004	Stokes	19,866		
Randolph	28,232	Surry	25,515	Watauga	13,417
Richmond	28,408	Swain	8,401	Wayne	31,356
Robeson	40,371	Transylvania	6,620	Wilkes	26,872
		Tyrrell	4,980	Wilson	23,596
Rockingham	33,163			Yadkin	14,083
Rowan	31,066	Union	27,156	Yancey	11,464

TOTAL 1,893,810

NORTH DAKOTA.—Area, 72,000 square miles.

Barnes	13,159	Kidder	1,754	Richland	17,387
Benson	8,320	Lamoure	6,048	Rolette	7,995
Billings	975	Logan	1,625	Sargent	6,039
Bottineau	7,532	McHenry	5,253	Stark	7,621
		McIntosh	4,818	Steele	5,888
Burleigh	6,081				
Cass	28,625	McLean	4,791	Stutsman	9,143
Cavalier	12,580	Mercer	1,778	Towner	6,491
		Morton	8,069	Traill	13,107
Dickey	6,061			Walsh	20,288
Eddy	3,330	Nelson	7,316	Ward	7,961
Emmons	4,349	Oliver	990		
		Pembina	17,869	Wells	8,310
Foster	3,770	Pierce	4,765	Williams	1,530
Grand Forks	24,459	Ramsey	9,198	Standing Rock Indian Reservation	2,208
Griggs	4,744				
		Ransom	6,919		

TOTAL 319,146

OHIO.—Area, 39,964 square miles.

Adams	26,328	Delaware	26,401	Jefferson	44,357
Allen	47,976	Erie	37,650	Knox	27,768
Ashland	21,184	Fairfield	34,259	Lake	21,680
Ashtabula	51,448	Fayette	21,725	Lawrence	39,534
Athens	38,730	Franklin	164,460	Licking	47,070
Auglaize	31,192	Fulton	22,801	Logan	30,420
Belmont	60,875	Gallia	27,918	Lorain	54,857
Brown	28,237	Geauga	14,744	Lucas	153,559
Butler	56,870	Greene	31,613	Madison	20,590
Carroll	16,811	Guernsey	34,425	Mahoning	70,134
Champaign	26,642	Hamilton	409,479	Marion	28,678
Clark	58,939	Hancock	41,993	Medina	21,958
Clermont	31,610	Hardin	31,187	Meigs	28,620
Clinton	24,202	Harrison	20,486	Mercer	28,021
Columbiana	68,590	Henry	27,282	Miami	43,105
Coshocton	29,337	Highland	30,982	Monroe	27,031
Crawford	33,915	Hocking	24,398	Montgomery	130,146
Cuyahoga	439,120	Holmes	19,511	Morgan	17,905
Darke	42,532	Huron	32,330	Morrow	17,879
Defiance	26,387	Jackson	34,248	Muskingum	53,185

Noble..... 19,466	Ross..... 40,940	Van Wert..... 30,394
Ottawa..... 22,213	Sandusky..... 34,311	Vinton..... 15,330
Paulding..... 27,528	Scioto..... 40,981	Warren..... 25,584
Perry..... 31,841	Seneca..... 41,163	Washington.... 48,245
Pickaway..... 27,016	Shelby..... 24,625	Wayne..... 87,870
Pike..... 18,172	Stark..... 94,747	Williams..... 24,953
Portage..... 29,246	Summit..... 71,715	Wood..... 51,555
Preble..... 23,713	Trumbull..... 46,591	Wyandot..... 21,125
Putnam..... 32,525	Tuscarawas.... 53,751	
Richland..... 44,289	Union..... 22,342	

TOTAL.....4,157,545

OKLAHOMA.—Area, 2,950 square miles.

Beaver..... 3,051	Greer..... 17,922	Payne..... 20,909
Blaine..... 10,658		Pottawatomie.. 26,412
Canadian..... 15,981	Kay..... 22,530	Roger Mills.... 6,190
Cleveland..... 16,388	Kingfisher..... 18,501	
Custer..... 12,264	Lincoln..... 27,007	Washita..... 15,001
	Logan..... 26,538	Woods..... 34,975
Day..... 2,173	Noble..... 14,015	Woodward..... 7,469
Dewey..... 8,819		Indian Reservation..... 12,873
Garfield..... 22,076	Oklahoma..... 25,854	
Grant..... 17,273	Pawnee..... 12,366	

TOTAL.....389,245

OREGON.—Area, 102,606 square miles.

Baker..... 15,597	Harney..... 2,598	Multomah.....103,167
Benton..... 6,706	Jackson..... 13,698	
Clackamas..... 19,658	Josephine..... 7,517	Polk..... 9,923
Clatsop..... 12,765	Klamath..... 3,970	Sherman..... 3,477
Columbia..... 6,237		Tillamook..... 4,471
	Lake..... 2,847	Umatilla..... 18,049
Coos..... 10,324	Lane..... 19,604	Union..... 16,070
Crook..... 3,964	Lincoln..... 3,575	
Curry..... 1,868	Linn..... 18,603	Wallowa..... 5,538
Douglas..... 14,565		Wasco..... 13,199
Gilliam..... 3,201	Malheur..... 4,203	Washington.... 14,467
	Marion..... 27,713	Wheeler..... 2,443
Grant..... 5,948	Morrow..... 4,151	Yamhill..... 13,420

TOTAL.....413,536

PENNSYLVANIA.—Area, 46,000 square miles.

Adams..... 34,496	Cambria.....104,837	Cumberland.... 50,344
Allegheny.....775,058	Cameron..... 7,048	Dauphin.....114,443
Armstrong..... 52,551	Carbon..... 44,510	Delaware..... 94,762
Beaver..... 56,432	Center..... 42,894	Elk..... 32,903
Bedford..... 39,468	Chester..... 95,695	Erie..... 98,473
Berks.....159,615	Clarion..... 34,283	Fayette.....110,412
Blair..... 85,099	Clearfield..... 80,614	Forest..... 11,039
Bradford..... 59,403	Clinton..... 29,197	Franklin..... 54,902
Bucks..... 71,190	Columbia..... 39,896	Fulton..... 9,924
Butler..... 56,962	Crawford..... 63,343	Greene..... 28,281

Huntingdon.... 34,650	Mifflin..... 23,160	Somerset..... 49,461
Indiana..... 42,556	Monroe..... 21,161	Sullivan..... 12,134
Jefferson..... 59,113		Susquehanna... 40,043
Juniata..... 16,054	Montgomery ...138,995	Tioga..... 49,086
Lackawanna...193,831	Montour..... 15,526	Union..... 17,592
	Northampton... 99,687	
Lancaster.....159,241	Northumberland 90,911	Venango..... 49,648
Lawrence..... 57,042	Perry..... 26,263	Warren..... 38,946
Lebanon..... 53,827		Washington.... 92,181
Lehigh..... 93,893	Philadelphia..1,293,697	Wayne..... 30,171
Luzerne.....257,121	Pike..... 8,766	Westmoreland..160,175
	Potter..... 30,621	
Lycoming..... 75,663	Schuylkill 172,927	Wyoming..... 17,152
McKean..... 51,343	Snyder..... 17,304	York 116,418
Mercer..... 57,387		

TOTAL.....6,302,115

RHODE ISLAND.—Area, 1,306 square miles.

Bristol..... 13,144	Newport..... 32,599	Washington.... 24,154
Kent..... 29,976	Providence 328,683	

TOTAL 428,556

SOUTH CAROLINA.—Area, 29,385 square miles.

Abbeville..... 33,400	Dorchester..... 16,294	Marion..... 35,181
Aiken..... 39,032		Marlboro..... 27,639
Anderson..... 55,728	Edgefield..... 25,478	Newberry..... 30,182
Bamberg..... 17,296	Fairfield..... 29,425	
Barnwell..... 35,504	Florence..... 28,474	Oconee..... 23,634
	Georgetown.... 22,846	Orangeburg.... 59,663
Beaufort..... 35,495	Greenville..... 53,490	Pickens..... 19,375
Berkeley..... 30,454		Richland..... 45,589
Charleston..... 88,006	Greenwood..... 28,343	Saluda..... 18,966
Cherokee..... 21,359	Hampton..... 23,738	
Chester..... 28,616	Horry..... ... 23,364	Spartanburg ... 65,560
	Kershaw..... 24,696	Sumter..... 51,237
Chesterfield.... 20,401	Lancaster..... 24,311	Union..... 25,501
Clarendon..... 28,184		Williamsburg.. 31,685
Colleton..... 33,452	Laurens..... 37,382	York..... 41,684
Darlington..... 32,388	Lexington..... 27,264	

TOTAL.....1,340,316

SOUTH DAKOTA.—Area, 78,932 square miles.

Aurora..... 4,011	Clark..... 6,942	Faulk..... 3,547
Beadle..... 8,081	Clay..... 9,316	Grant..... 9,103
Bonhomme.... 10,379	Coddington.... 8,770	Gregory..... 2,211
Brookings..... 12,561	Custer..... 2,728	Hamlin..... 5,945
Brown..... 15,286	Davison..... 7,483	Hand..... 4,525
Brule..... 5,401	Day..... 12,254	Hanson..... 4,947
Buffalo..... 1,790	Deuel..... 6,656	Hughes..... 3,684
Butte..... 2,907	Douglas..... 5,012	Hutchinson.... 11,897
Campbell..... 4,527	Edmunds..... 4,916	Hyde..... 1,492
Charles Mix.... 8,498	Fall River..... 3,541	Jerauld..... 2,798

Kingsbury	9,866	Miner	5,864	Stanley	1,349
Lake	9,137			Sully	1,715
Lawrence	17,897	Minnehaha	23,926	Turner	13,175
Lincoln	12,161	Moody	8,326		
Lyman	2,632	Pennington	5,610	Union	11,153
		Potter	2,988	Walworth	3,839
McCook	8,689	Roberts	12,216	Yankton	12,649
McPherson	6,327			Indian Reservation	16,043
Marshall	5,942	Sanborn	4,644		
Meade	4,907	Spink	9,487		

TOTAL.....401,570

TENNESSEE.—Area, 45,500 square miles.

Anderson	17,634	Hamilton	61,695	Moore	5,706
Bedford	23,845	Hancock	11,147		
Benton	11,888	Hardeman	22,976	Morgan	9,587
Bledsoe	6,626			Obion	28,286
Blount	19,206	Hardin	19,246	Overton	13,253
		Hawkins	24,267	Perry	8,800
Bradley	15,759	Haywood	25,189	Pickett	5,366
Campbell	17,317	Henderson	18,117		
Cannon	12,121	Henry	24,208	Polk	11,357
Carroll	24,250			Putnam	16,890
Carter	16,688	Hickman	16,367	Rhea	14,318
		Houston	6,476	Roane	22,738
Cheatham	10,112	Humphreys	13,398	Robertson	25,029
Chester	9,896	Jackson	15,039		
Claiborne	20,696	James	5,407	Rutherford	33,543
Clay	8,421			Scott	11,077
Cocke	19,153	Jefferson	18,590	Sequatchie	3,326
		Johnson	10,589	Sevier	22,021
Coffee	15,574	Knox	74,302	Shelby	153,557
Crockett	15,867	Lake	7,368		
Cumberland	8,311	Lauderdale	21,971	Smith	19,026
Davidson	122,815			Stewart	15,224
Decatur	10,439	Lawrence	15,402	Sullivan	24,935
		Lewis	4,455	Sumner	26,072
Dekalb	16,460	Lincoln	26,304	Tipton	29,273
Dickson	18,635	Loudon	10,838		
Dyer	23,776	McMinn	19,163	Trousdale	6,004
Fayette	29,701			Unicoi	5,851
Fentress	6,106	McNairy	17,760	Union	12,894
		Macon	12,881	Van Buren	3,126
Franklin	20,392	Madison	36,333	Warren	16,410
Gibson	39,408	Marion	17,281		
Giles	33,035	Marshall	18,763	Washington	22,604
Grainger	15,512			Wayne	12,936
Greene	30,596	Maury	42,703	Weakley	32,546
		Meigs	7,491	White	14,157
Grundy	7,802	Monroe	18,585	Williamson	26,429
Hamblen	12,728	Montgomery	36,017	Wilson	27,078

TOTAL.....2,020,616

TEXAS.—Area, 237,504 square miles.

Anderson	28,015	Coryell	21,308	Hansford	167
Andrews	87	Cottle	1,002	Hardeman	3,634
Angelina	13,481			Hardin	5,049
Aransas	1,716	Crane	51	Harris	63,786
Archer	2,508	Crockett	1,591	Harrison	31,878
		Crosby	788		
Armstrong	1,205	Dallam	146	Hartley	377
Atascosa	7,143	Dallas	82,726	Haskell	2,637
Austin	20,676			Hays	14,142
Bailey	4	Dawson	37	Hemphill	815
Bandera	5,332	Deaf Smith	843	Henderson	19,970
		Delta	15,249		
Bastrop	26,845	Denton	28,318	Hidalgo	6,837
Baylor	3,052	Dewitt	21,311	Hill	41,355
Bee	7,720			Hockley	44
Bell	45,535	Dickens	1,151	Hood	9,146
Bexar	69,422	Dimmit	1,106	Hopkins	27,950
		Donley	2,756		
Blanco	4,703	Duval	8,483	Houston	25,452
Borden	776	Eastland	18,971	Howard	2,528
Bosque	17,390			Hunt	47,295
Bowie	26,676	Ector	381	Hutchinson	303
Brazoria	14,861	Edwards	3,108	Iron	848
		Ellis	50,059		
Brazos	18,859	El Paso	24,886	Jack	10,224
Brewster	2,356	Erath	29,966	Jackson	6,094
Briscoe	1,253			Jasper	7,138
Brown	16,019	Falls	33,342	Jeff Davis	1,150
Burleson	18,367	Fannin	51,793	Jefferson	14,239
		Fayette	36,542		
Burnet	10,528	Fisher	3,708	Johnson	33,819
Caldwell	21,765	Floyd	2,020	Jones	7,053
Calhoun	2,395			Karnes	8,681
Callahan	8,768	Foard	1,568	Kaufman	33,376
Cameron	16,095	Fort Bend	16,538	Kendall	4,103
		Franklin	8,674		
Camp	9,146	Freestone	18,910	Kent	899
Carson	469	Frio	4,200	Kerr	4,980
Cass	22,841			Kimble	2,563
Castro	400	Gaines	55	King	490
Chambers	3,046	Galveston	44,116	Kinney	2,447
		Garza	185		
Cherokee	25,154	Gillespie	8,229	Knox	2,322
Childress	2,138	Glasscock	286	Lamar	48,627
Clay	9,231			Lamb	31
Cochran	25	Goliad	8,310	Lampasas	8,625
Coke	3,430	Gonzales	28,882	Lasalle	2,303
		Gray	480		
Coleman	10,077	Grayson	63,661	Lavaca	28,121
Collin	50,087	Gregg	12,343	Lee	14,595
Collingsworth	1,233			Leon	18,072
Colorado	22,203	Grimes	26,106	Liberty	8,102
Comal	7,008	Guadalupe	21,385	Limestone	32,573
		Hale	1,680		
Comanche	23,009	Hall	1,670	Lipscomb	790
Concho	1,427	Hamilton	13,520	Live Oak	2,268
Cooke	27,494			Llano	7,301

Loving	33	Parker	25,823	Tarrant	52,376
Lubbock	293	Parmer	34	Taylor	10,499
		Pecos	2,360	Terry	48
Lynn	17	Polk	14,447	Throckmorton	1,750
McCulloch	3,960			Titus	12,292
McLennan	59,772	Potter	1,820		
McMullen	1,024	Presidio	3,673	Tom Green	6,804
Madison	10,432	Rains	6,127	Travis	47,386
		Randall	963	Trinity	10,976
Marion	10,754	Red River	29,893	Tyler	11,899
Martin	332			Upshur	16,266
Mason	5,573	Reeves	1,847		
Matagorda	6,097	Refugio	1,641	Upton	48
Maverick	4,066	Roberts	620	Uvalde	4,647
		Robertson	31,480	Valverde	5,263
Medina	7,783	Rockwall	8,531	Van Zandt	25,481
Menard	2,011			Victoria	13,678
Midland	1,741	Runnels	5,379		
Milam	39,666	Rusk	26,099	Walker	15,813
Mills	7,851	Sabine	6,394	Waller	14,246
		San Augustine	8,434	Ward	1,451
Mitchell	2,855	San Jacinto	10,277	Washington	32,931
Montague	24,800			Webb	21,851
Montgomery	17,067	San Patricio	2,372		
Moore	209	San Saba	7,569	Wharton	16,942
Morris	8,220	Schleicher	515	Wheeler	636
		Scurry	4,158	Wichita	5,806
Motley	1,257	Shackelford	2,461	Wilbarger	5,759
Nacogdoches	24,663			Williamson	38,072
Navarro	43,374	Shelby	20,452		
Newton	7,282	Sherman	104	Wilson	13,961
Nolan	2,611	Smith	37,370	Winkler	60
		Somervell	3,498	Wise	27,116
Nueces	10,439	Starr	11,469	Wood	21,048
Ochiltree	267				
Oldham	349	Stephens	6,466	Yoakum	26
Orange	5,905	Sterling	1,127	Young	6,540
Palo Pinto	12,291	Stonewall	2,183	Zapata	4,760
		Sutton	1,727	Zavalla	792
Panola	21,404	Swisher	1,227		

TOTAL.....3,048,710

UTAH.—Area, 84,476 square miles.

Beaver	3,613	Juab	10,082	Sevier	8,451
Boxelder	10,009				
Cache	18,139	Kane	1,811	Summit	9,439
Carbon	5,004	Millard	5,678	Tooele	7,361
Davis	7,996	Morgan	2,045	Uinta	6,458
		Piute	1,954	Utah	32,456
Emery	4,657	Rich	1,946		
Garfield	3,400			Wasatch	4,736
Grand	1,149	Salt Lake	77,725	Washington	4,612
Iron	3,546	San Juan	1,023	Wayne	1,907
		Sanpete	16,313	Weber	25,239

TOTAL.....276,749

VERMONT.—Area, 10,212 square miles.

Addison	21,912	Franklin	30,198	Rutland	44,209
Bennington	21,705	Grand Isle	4,462	Washington	36,607
Caledonia	24,381	Lamoille	12,289	Windham	26,660
Chittenden	39,600	Orange	19,313	Windsor	32,225
Essex	8,056	Orleans	22,024		

TOTAL.....343,641

VIRGINIA.—Area, 38,352 square miles.

Accomac	32,570	Frederick	18,400	Nottoway	12,366
Albemarle	34,920			Orange	12,571
Alexandria	20,959	Giles	10,793	Page	13,794
Alleghany	16,330	Gloucester	12,832		
Amelia	9,037	Goochland	9,519	Patrick	15,403
		Grayson	16,853	Pittsylvania	63,414
Amherst	17,864	Greene	6,214	Powhatan	6,824
Appomattox	9,662			Prince Edward	15,045
Augusta	39,659	Greenesville	9,758	Prince George	7,752
Bath	5,595	Halifax	37,197		
Bedford	30,356	Hanover	17,618	Princess Anne	11,192
		Henrico	15,112	Prince William	11,112
Bland	5,497	Henry	19,265	Pulaski	14,609
Botetourt	17,161			Rappahannock	8,843
Brunswick	18,217	Highland	5,647	Richmond	7,088
Buchanan	9,692	Isle of Wight	13,102		
Buckingham	15,266	James City	5,732	Roanoke	37,332
		King and Queen	9,265	Rockbridge	24,187
Campbell	42,147	King George	6,918	Rockingham	33,527
Caroline	16,709			Russell	18,031
Carroll	19,303	King William	8,380	Scott	22,694
Charles City	5,040	Lancaster	8,949		
Charlotte	15,343	Lee	19,856	Shenandoah	20,253
		Loudoun	21,948	Smyth	17,121
Chesterfield	28,519	Louisa	16,517	Southampton	22,848
Clarke	7,927			Spottsylvania	14,307
Craig	4,293	Lunenburg	11,705	Stafford	8,097
Culpeper	14,123	Madison	10,216		
Cumberland	8,996	Mathews	8,239	Surry	8,469
		Mecklenburg	26,551	Sussex	12,082
Dickenson	7,747	Middlesex	8,220	Tazewell	23,384
Dinwiddie	15,374			Warren	8,837
Elizabeth City	19,460	Montgomery	19,196	Warwick	15,524
Essex	9,701	Nansemond	23,078		
Fairfax	18,580	Nelson	16,075	Washington	33,574
		New Kent	4,865	Westmoreland	9,243
Fauquier	23,374	Norfolk	14,831	Wise	19,653
Floyd	15,388			Wythe	20,437
Fluvanna	9,050	Northampton	13,770	York	7,482
Franklin	25,953	Northumberland	9,846		

TOTAL.....1,854,184

WASHINGTON.—Area, 69,994 square miles.

Adams	4,840	Island	1,870	San Juan	2,928
Asotin	3,366	Jefferson	5,712		
Chehalis	15,124	King	110,053	Skagit	14,272
Chelan	3,931			Skamania	1,688
Clallam	5,603	Kitsap	6,767	Snohomish	23,950
		Kittitas	9,704	Spokane	57,542
Clarke	13,419	Klickitat	6,407	Stevens	10,543
Columbia	7,128	Lewis	15,157		
Cowlitz	7,877	Lincoln	11,969	Thurston	9,927
Douglas	4,926			Wahkiakum	2,819
Ferry	4,562	Mason	3,810	Wallawalla	18,680
		Okanogan	4,689	Whatcom	24,116
Franklin	486	Pacific	5,983	Whitman	25,360
Garfield	3,918	Pierce	55,515	Yakima	13,462

TOTAL.....518,103

WEST VIRGINIA.—Area, 23,000 square miles.

Barbour	14,198	Kanawha	54,696	Pocahontas	8,572
Berkeley	19,469			Preston	22,727
Boone	8,194	Lewis	16,980	Putnam	17,330
Braxton	18,904	Lincoln	15,434		
Brooke	7,219	Logan	6,955	Raleigh	12,436
		McDowell	18,747	Randolph	17,670
Cabell	29,252	Marion	32,430	Ritchie	18,901
Calhoun	10,266			Roane	19,852
Clay	8,248	Marshall	26,444	Summers	16,265
Doddridge	13,689	Mason	24,142		
Fayette	31,987	Mercer	23,023	Taylor	14,978
		Mineral	12,883	Tucker	13,433
Gilmer	11,762	Mingo	11,359	Tyler	18,252
Grant	7,275			Upshur	14,696
Greenbrier	20,683	Monongalia	19,049	Wayne	23,619
Hampshire	11,806	Monroe	13,130		
Hancock	6,693	Morgan	7,294	Webster	8,862
		Nicholas	11,403	Wetzel	22,880
Hardy	8,449	Ohio	48,024	Wirt	10,284
Harrison	27,690			Wood	34,452
Jackson	22,987	Pendleton	9,167	Wyoming	8,380
Jefferson	15,935	Pleasants	9,345		

TOTAL.....958,800

WISCONSIN.—Area, 53,924 square miles.

Adams	9,141	Buffalo	16,765	Columbia	31,121
Ashland	20,176	Burnett	7,478	Crawford	17,286
Barron	23,677	Calumet	17,078	Dane	69,435
Bayfield	14,392	Chippewa	33,037	Dodge	46,631
Brown	46,359	Clark	25,848	Door	17,583

Douglas	36,335	Lincoln	16,269	Rock	51,203
Dunn	25,043			St. Croix	26,830
Eau Claire	31,692	Manitowoc	42,261	Sauk	33,006
Florence	3,197	Marathon	43,256		
Fond du Lac	47,589	Marinette	30,822	Sawyer	3,593
		Marquette	10,509	Shawano	27,475
Forest	1,396	Milwaukee	330,017	Sheboygan	50,345
Grant	38,881			Taylor	11,262
Green	22,719	Monroe	28,103	Trempealeau	23,114
Green Lake	15,797	Oconto	20,874		
Iowa	23,114	Oneida	8,875	Vernon	28,351
		Outagamie	46,247	Vilas	4,929
Iron	6,616	Ozaukee	16,363	Walworth	29,259
Jackson	17,466			Washburn	5,521
Jefferson	34,789	Pepin	7,905	Washington	23,589
Juneau	20,629	Pierce	23,943		
Kenosha	21,707	Polk	17,801	Waukesha	35,229
		Portage	29,483	Waupaca	31,615
Kewaunee	17,212	Price	9,106	Waushara	15,972
La Crosse	42,997			Winnebago	58,225
Lafayette	20,959	Racine	45,644	Wood	25,865
Langlade	12,553	Richland	19,483		

TOTAL.....2,069,042

WYOMING.—Area, 97,883 square miles.

Albany	13,084	Fremont	5,357	Sweetwater	8,455
Bighorn	4,328	Johnson	2,361	Uinta	12,223
Carbon	9,589	Laramie	20,181	Weston	3,203
Converse	3,337	Natrona	1,785	Yellowstone Park	369
Crook	3,137	Sheridan	5,122		

TOTAL.....92,531

POPULATION OF CITIES

OF THE

UNITED STATES

Having over 25,000 Inhabitants

Census of 1900

New York, N. Y.	3,437,202	New Haven, Conn.	108,027
Chicago, Ill.	1,698,575	Paterson, N. J.	105,171
Philadelphia, Pa.	1,293,697	Fall River, Mass.	104,863
St. Louis, Mo.	575,238	St. Joseph, Mo.	102,979
Boston, Mass.	560,892	Omaha, Neb.	102,555
Baltimore, Md.	508,957	Los Angeles, Cal.	102,479
Cleveland, Ohio.	381,768	Memphis, Tenn.	102,320
Buffalo, N. Y.	352,387	Scranton, Pa.	102,026
San Francisco, Cal.	342,782	Lowell, Mass.	94,969
Cincinnati, Ohio	325,902	Albany, N. Y.	94,151
Pittsburg, Pa.	321,616	Cambridge, Mass.	91,886
New Orleans, La.	287,104	Portland, Ore	90,426
Detroit, Mich.	285,704	Atlanta, Ga	89,872
Milwaukee, Wis.	285,315	Grand Rapids, Mich.	87,565
Washington, D. C.	278,718	Dayton, Ohio.	85,333
Newark, N. J.	246,070	Richmond, Va.	85,050
Jersey City, N. J.	206,433	Nashville, Tenn.	80,865
Louisville, Ky	204,731	Seattle, Wash.	80,671
Minneapolis, Minn	202,718	Hartford, Conn	79,850
Providence, R. I.	175,597	Reading, Pa.	78,961
Indianapolis, Ind.	169,164	Wilmington, Del.	76,508
Kansas City, Mo.	163,752	Camden, N. J.	75,935
St. Paul, Minn.	163,065	Trenton, N. J.	73,307
Rochester, N. Y.	162,608	Bridgeport, Conn	70,996
Denver, Col.	133,859	Lynn, Mass	68,513
Toledo, Ohio	131,822	Oakland, Cal.	66,960
Allegheny, Pa	129,896	Lawrence, Mass.	62,559
Columbus, Ohio.	125,560	New Bedford, Mass	62,442
Worcester, Mass.	118,421	Des Moines, Iowa	62,139
Syracuse, N. Y.	108,374	Springfield, Mass.	62,059

Somerville, Mass.	61,643
Troy, N. Y.	60,651
Hoboken, N. J.	59,364
Evansville, Ind.	59,007
Manchester, N. H.	56,987
Utica, N. Y.	56,383
Peoria, Ill.	56,100
Charleston, S. C.	55,807
Savannah, Ga.	54,244
Salt Lake City, Utah.	53,531
San Antonio, Tex.	53,321
Duluth, Minn.	52,969
Erie, Pa.	52,733
Elizabeth, N. J.	52,130
Wilkesbarre, Pa.	51,721
Kansas City, Kan.	51,418
Harrisburg, Pa.	50,167
Portland, Me.	50,145
Yonkers, N. Y.	47,931
Norfolk, Va.	46,624
Waterbury, Conn.	45,859
Holyoke, Mass.	45,712
Fort Wayne, Ind.	45,115
Youngstown, Ohio.	44,885
Houston, Tex.	44,633
Covington, Ky.	42,938
Akron, Ohio	42,728
Dallas, Tex.	42,638
Saginaw, Mich.	42,345
Lancaster, Pa.	41,459
Lincoln, Neb.	40,169
Brockton, Mass.	40,063
Binghamton, N. Y.	39,647
Augusta, Ga.	39,441
Pawtucket, R. I.	39,231
Altoona, Pa.	38,973
Wheeling, W. Va.	38,878
Mobile, Ala.	38,469
Birmingham, Ala.	38,415
Little Rock, Ark.	38,307
Springfield, Ohio.	38,253
Galveston, Tex.	37,789
Tacoma, Wash.	37,714
Haverhill, Mass.	37,175
Spokane, Wash.	36,848
Terre Haute, Ind.	36,673
Dubuque, Iowa.	36,297
Quincy, Ill.	36,252
South Bend, Ind.	35,999
Salem, Mass.	35,956
Johnstown, Pa.	35,936
Elmira, N. Y.	35,672
Allentown, Pa.	35,416
Davenport, Iowa	35,254
McKeesport, Pa.	34,227
Springfield, Ill.	34,159
Chelsea, Mass.	34,072
Chester, Pa.	33,988
York, Pa.	33,708
Malden, Mass	33,664
Topeka, Kan.	33,608
Newton, Mass.	33,587
Sioux City, Iowa.	33,111
Bayonne, N. J.	32,722
Knoxville, Tenn.	32,637
Chattanooga, Tenn.	32,490
Schenectady, N. Y.	31,682
Fitchburg, Mass.	31,531
Superior, Wis.	31,091
Rockford, Ill.	31,051
Taunton, Mass.	31,036
Canton, Ohio	30,667
Butte, Mont.	30,470
Montgomery, Ala.	30,346
Auburn, N. Y.	30,345
East St. Louis, Ill	29,655
Joliet, Ill.	29,353
Sacramento, Cal.	29,282
Racine, Wis.	29,102
La Crosse, Wis	28,895
Williamsport, Pa.	28,757
Jacksonville, Fla.	28,429
Newcastle, Pa.	28,339
Newport, Ky.	28,301
Oshkosh, Wis.	28,284
Woonsocket, R. I.	28,204
Pueblo, Col	28,157
Atlantic City, N. J	27,838
Passaic, N. J.	27,777
Bay City, Mich.	27,628
Fort Worth, Tex.	26,688
Lexington, Ky	26,369
Gloucester, Mass.	26,121
South Omaha, Neb.	26,001
New Britain, Conn.	25,998
Council Bluffs, Iowa.	25,802
Cedar Rapids, Iowa.	25,656
Easton, Pa.	25,238
Jackson, Mich.	25,180

POPULATION, NUMBER OF COUNTIES, FARMS, AND FAMILIES, IN EACH STATE

(Compiled from the Census Bulletin, 1900, and the Census of 1890)

States and Territories.	Population, 1900.	Counties, 1900.	Number of Farms, 1890.	Number of Families, 1890.
Maine	694,466	16	62,013	150,355
New Hampshire	411,588	10	29,151	87,348
Vermont	343,641	14	32,573	75,869
Massachusetts	2,805,346	14	34,374	479,790
Rhode Island	428,556	5	5,500	75,010
Connecticut	908,355	8	26,350	165,890
New York	7,268,012	61	226,223	1,808,015
New Jersey	1,883,669	21	30,828	308,339
Pennsylvania	6,302,115	67	211,557	1,061,626
N. Atlantic Division.	21,045,748	216	658,569	3,712,242
Delaware	184,735	3	9,381	34,578
Maryland	1,190,050	24	40,798	202,179
District of Columbia	278,718	—	382	43,967
Virginia	1,854,184	100	127,600	304,673
West Virginia	958,800	55	72,773	140,359
North Carolina	1,893,810	97	178,359	306,952
South Carolina	1,340,316	41	115,008	222,941
Georgia	2,216,331	137	171,071	352,059
Florida	528,542	45	34,228	80,059
S. Atlantic Division.	10,445,486	533	649,600	1,687,767
Ohio	4,157,545	88	251,430	785,291
Indiana	2,516,462	92	198,167	467,146
Illinois	4,821,550	102	240,681	778,015
Michigan	2,420,982	85	172,344	455,004
Wisconsin	2,069,042	70	146,409	335,456

States and Territories.	Population, 1900.	Counties, 1900.	Number of Farms, 1890.	Number of Families, 1890.
Minnesota	1,751,394	82	116,851	247,975
Iowa	2,231,853	99	201,903	388,517
Missouri	3,106,665	115	238,043	528,295
North Dakota	319,146	39	27,611	38,478
South Dakota	401,570	53	50,158	70,250
Nebraska	1,068,539	90	113,608	206,820
Kansas	1,470,495	106	166,617	297,358
N. Central Division	26,335,243	1,021	1,923,822	4,598,605
Kentucky	2,147,174	119	179,264	354,463
Tennessee	2,020,616	96	174,412	334,194
Alabama	1,828,697	66	157,772	287,292
Mississippi	1,551,270	75	144,318	241,148
Louisiana	1,381,625	59	69,294	214,123
Texas	3,048,710	246	228,126	411,251
Oklahoma	398,245	24	8,826	15,029
Arkansas	1,311,564	75	124,760	213,620
S. Central Division	13,687,901	760	1,086,772	2,071,120
Montana	243,329	24	5,603	27,501
Wyoming	92,513	13	8,125	12,065
Colorado	539,700	57	16,389	84,276
New Mexico	195,310	20	4,458	35,504
Arizona	122,931	13	1,426	13,495
Utah	276,749	27	10,517	38,816
Nevada	42,335	14	1,277	10,170
Idaho	161,772	21	6,603	18,113
Washington	518,103	36	18,056	70,977
Oregon	413,536	33	25,530	63,791
California	1,485,053	57	52,894	245,710
Western Division	4,091,331	315	145,878	620,418
N. Atlantic Division	21,045,748	216	658,569	3,712,242
S. Atlantic Division	10,445,486	533	649,600	1,687,767
N. Central Division	26,335,243	1,021	1,923,822	4,598,605
S. Central Division	13,687,901	760	1,086,772	2,071,120
Western Division	4,091,331	315	145,878	620,418
Grand Total	75,605,709	2,845	4,564,641	12,690,152

TABLE OF OCCUPATIONS

Census of 1890

ALL OCCUPATIONS (persons engaged in)	22,735,661

AGRICULTURE, FISHERIES, AND MINING, total, 9,013,336

Agricultural laborers	3,004,061
Apiarists	1,773
Dairymen and dairywomen	17,895
Farmers, planters, and overseers	5,281,557
Fishermen and oystermen	60,162
Gardeners, florists, nurserymen, and vine growers	72,601
Lumbermen and raftsmen	65,866
Miners (coal)	208,545
Miners (not otherwise specified)	141,047
Quarrymen	37,656
Stock raisers, herders, and drovers	70,729
Wood choppers	33,697
Other agricultural pursuits	17,747

PROFESSIONAL SERVICE, 944,333

Actors	9,728
Architects	8,070
Artists and teachers of art	22,496
Authors and literary and scientific persons	6,714
Chemists, assayers, and metallurgists	4,503
Clergymen	88,203
Dentists	17,498
Designers, draughtsmen, and inventors	9,391
Engineers (civil, mechanical, electrical, and mining and surveyors)	43,239
Journalists	21,849
Lawyers	89,630
Musicians and teachers of music	62,155
Officers of the United States army and navy	2,926
Officials (Government)	79,664
Physicians and surgeons	104,805
Professors in colleges and universities	5,392
Teachers	341,952
Theatrical managers, showmen, etc	18,055
Veterinary surgeons	6,494
Other professional service	1,569

Domestic and Personal Service, 4,360,577

Barbers and hairdressers	84,982
Bartenders	55,806
Boarding and lodging house keepers	44,349
Engineers and firemen (not locomotive)	139,765
Hotel keepers	44,076
Housekeepers and stewards	92,036
Hunters, trappers, guides, and scouts	2,534
Janitors	21,556
Laborers (not specified)	1,913,373
Launderers and laundresses	248,462
Nurses and midwives	47,586
Restaurant keepers	19,283
Saloon keepers	71,385
Servants	1,454,791
Sextons	4,982
Soldiers, sailors, and marines (United States)	27,819
Watchmen, policemen, and detectives	74,629
Other domestic and personal service	13,063

Trade and Transportation, 3,326,122

Agents (claim, commission, real estate, insurance, etc.) and collectors	174,582
Auctioneers	3,205
Bankers and brokers (money and stocks)	30,008
Boatmen and canalmen	16,716
Bookkeepers and accountants	159,374
Brokers (commercial)	5,960
Clerks and copyists	557,358
Commercial travellers	58,691
Draymen, hackmen, teamsters, etc.	368,499
Foremen and overseers	36,084
Hostlers	54,036
Hucksters and pedlers	59,083
Livery stable keepers	26,757
Locomotive engineers and firemen	79,463
Merchants and dealers in drugs and chemicals (retail)	46,375
Merchants and dealers in drygoods (retail)	42,527
Merchants and dealers in groceries (retail)	114,997
Merchants and dealers in wines and liquors (retail)	10,078
Merchants and dealers in wines and liquors (wholesale)	3,643
Merchants and dealers not specified (retail)	446,262
Merchants and dealers (wholesale), importers and shipping merchants	27,443
Messengers, and errand and office boys	51,355
Newspaper carriers and newsboys	5,288
Officials of banks and insurance, trade, transportation, trust and other companies	39,900
Packers and shippers	24,946
Pilots	4,259
Porters and helpers (in stores and warehouses)	24,356
Sailors	55,899
Salesmen and saleswomen	264,394
Steam railroad employés (not otherwise specified)	382,750
Stenographers and typewriters	33,418

TRADE AND TRANSPORTATION.—*Continued.*

Street railway employés	37,434
Telephone and telegraph operators	52,214
Telephone and telegraph linemen and electric light and power company employés	11,134
Undertakers	9,891
Weighers, gaugers, and measurers	3,860
Other persons in trade and transportation	3,883

MANUFACTURING AND MECHANICAL INDUSTRIES, 5,091,293

Agricultural implement makers (not otherwise classified)	3,755
Apprentices (blacksmiths')	4,244
Apprentices (boot and shoe makers')	1,031
Apprentices (carpenters and joiners')	6,760
Apprentices (carriage and wagon makers')	852
Apprentices (dressmakers')	4,340
Apprentices (leather curriers', etc.)	421
Apprentices (machinists')	9,738
Apprentices (masons')	1,927
Apprentices (milliners')	1,204
Apprentices (painters')	2,321
Apprentices (plumbers')	4,624
Apprentices (printers')	4,635
Apprentices (tailors')	2,625
Apprentices (tinsmiths')	2,037
Apprentices (not otherwise specified)	35,698
Artificial flower makers	3,046
Bakers	60,197
Basket makers	5,225
Blacksmiths	205,337
Bleachers, dyers, and scourers	14,210
Bone and ivory workers	1,691
Bookbinders	23,858
Boot and shoe makers and repairers	213,544
Bottlers and mineral and soda-water makers	7,230
Box makers (paper)	17,757
Box makers (wood)	10,883
Brass workers (not otherwise specified)	17,265
Brewers and maltsters	20,362
Brick and tile makers and terra cotta workers	60,214
Britannia workers	904
Broom and brush makers	10,115
Builders and contractors	45,988
Butchers	105,456
Butter and cheese makers	11,211
Button makers	2,601
Cabinet makers	35,915
Candle, soap, and tallow makers	3,450
Carpenters and joiners	611,482
Carpet makers	22,302
Carriage and wagon makers (not otherwise classified)	34,538
Charcoal, coke, and lime burners	8,704
Chemical works employés	3,628
Clock and watch makers and repairers	25,252
Compositors	30,060
Confectioners	23,251

MANUFACTURING AND MECHANICAL INDUSTRIES.—*Continued.*

Coopers	47,486
Cooper workers	3,384
Corset makers	6,533
Cotton mill operatives	173,142
Distillers and rectifiers	3,314
Door, sash, and blind makers	5,041
Dressmakers	289,164
Electroplaters	2,756
Electrotypers and stereotypers	1,471
Engravers	8,320
Fertilizer makers	732
Fish curers and packers	1,279
Gas works employés	5,224
Glass workers	34,382
Glove makers	6,416
Gold and silver workers	20,263
Gunsmiths, locksmiths, and bell hangers	9,158
Hair workers	1,254
Harness and saddle makers and repairers	43,480
Hat and cap makers	24,013
Hosiery and knitting mill operatives	29,555
Iron and steel workers	144,921
Lace and embroidery makers	5,256
Lead and zinc workers	4,616
Leather curriers, dressers, finishers, and tanners	39,332
Machinists	177,090
Manufacturers and officials of manufacturing companies	101,610
Marble and stone cutters	61,070
Masons (brick and stone)	158,918
Meat and fruit packers, canners, and preservers	5,830
Mechanics (not otherwise specified)	15,485
Metal workers (not otherwise specified)	16,694
Mill and factory operatives (not specified)	93,596
Millers (flour and grist)	52,841
Milliners	60,842
Model and pattern makers	10,300
Moulders	66,289
Musical instrument makers (not otherwise specified)	652
Nail and tack makers	4,583
Oil well employés	9,147
Oil works employés	5,624
Painters, glaziers, and varnishers	219,912
Paper hangers	12,369
Paper mill operatives	27,817
Photographers	20,840
Piano and organ makers and tuners	14,683
Plasterers	39,002
Plumbers and gas and steam fitters	56,607
Potters	14,928
Powder and cartridge makers	1,385
Printers, lithographers, and pressmen	86,893
Print works operatives	6,701
Publishers of books, maps, and newspapers	6,284
Roofers and slaters	7,043
Rope and cordage makers	8,001
Rubber factory operatives	16,162
Sail, awning, and tent makers	3,257
Salt works employés	1,765
Saw and planing mill employés	133,637

MANUFACTURING AND MECHANICAL INDUSTRIES.—*Continued.*

Seamstresses	150,044
Sewing machine makers (not otherwise classified)	880
Sewing machine operators	7,126
Ship and boat builders	22,951
Shirt, collar, and cuff makers	21,097
Silk mill operatives	34,855
Starch makers	746
Steam boiler makers	21,339
Stove, furnace, and grate makers	8,932
Straw workers	3,666
Sugar makers and refiners	2,616
Tailors and tailoresses	185,400
Tinners and tinware makers	55,488
Tobacco and cigar operatives	111,385
Tools and cutlery (not otherwise specified)	17,985
Trunk, valise, leather case, and pocket-book makers	6,297
Umbrella and parasol makers	3,403
Upholsterers	25,666
Well borers	4,854
Wheelwrights	12,856
Whitewashers	3,996
Wire workers	12,319
Wood workers (not otherwise specified)	67,360
Woolen mill operatives	84,109
Other persons in manufacturing and mechanical industries	76,714

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